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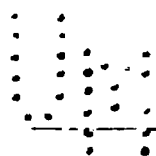
ANNUAL REPORTS

OF VARIOUS

Public Officers and Institutions,

FOR THE YEAR

1867.



PUBLISHED BY THE SECRETARY OF THE COMMONWEALTH,

Under authority of Chapter 4 of the General Statutes.

VOL. I.
Nos. 1 to 14.



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1868.

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TWENTY-FIFTH REGISTRATION REPORT.
1866.

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TWENTY-FIFTH REPORT

TO THE

LEGISLATURE OF MASSACHUSETTS,

RELATING TO THE

Registry and Return

OF

BIRTHS, MARRIAGES, AND DEATHS,

IN THE

COMMONWEALTH,

For the Year ending December 31, 1866.

PREPARED UNDER DIRECTION OF THE
SECRETARY OF THE COMMONWEALTH,

WITH EDITORIAL REMARKS

By GEORGE DERBY, M. D.,

University Lecturer on Hygiene in Harvard University.

B O S T O N :

WRIGHT & POTTER, STATE PRINTERS,
No. 4 SPRING LANE.

1868.

Commonwealth of Massachusetts.

SECRETARY'S OFFICE, BOSTON, April 6, 1868.

To the Honorable Senate and House of Representatives.

In compliance with the requirements of the laws of the Commonwealth, I have the honor to submit herewith the Annual Report relating to BIRTHS, DEATHS and MARRIAGES in Massachusetts, which have occurred during the year ending December 31, 1866, and have been returned, according to law, from the several cities and towns. This volume constitutes the Twenty-Fifth Annual Report upon the subject of the Registration of Births, Marriages and Deaths in Massachusetts.

The accompanying editorial remarks and observations have been prepared by GEORGE DERBY, M. D., of this city, Surgeon of the City Hospital, to whom the Commonwealth is also indebted for like services in the preparation of the Report for 1865. His familiarity with the details of the undertaking and previous acquaintance with the subject have undoubtedly enabled him to present such deductions from the Tables as will render the present not inferior in value or interest to any Report of previous years.

The present document, while embracing Tables upon the same subjects, and formulated after similar plans with those of former years, contains also new features of interest. The abstract of the Census of Massachusetts, taken by State authority in 1865, having been issued during the past year, has for the first time been made available in the preparation of the Report, and constitutes a part of the Tables.

A new and elaborate Table, exhibiting the PARENTAGE of all persons deceased during the past registration year, is now first incorporated with the Report and presented to the public, and may be found at page 48. This Table will afford opportunity for comparison of the relative mortality among those of Foreign or American Parentage, and for securing information upon certain contested points which it has not heretofore been practicable to obtain—the returns from the several cities and towns, until recently, not having included the place of birth of the parents of deceased persons among the subjects of inquiry to be recorded or reported to this department.

It will be perceived that more than usual attention has in the present Report been devoted to the discussion of the means of *preventing* disease. The editorial observations upon this important subject will be found instructive and valuable.

Special pains have been taken the past year to secure accuracy and completeness of the Returns from the

towns, by correspondence or personal communication with those disposed to delinquency in any respect. The laborious duties of the clerks in this office, in the preparation of the tables composing the bulk of this document, have been performed with great care and fidelity, and with a view to scrupulous accuracy.

In the Preface to the Report of the previous year, (1865,) it was mentioned that the Registration Reports of Massachusetts are constantly increasing in value, and have attained a high reputation at home and also in Europe. Allusion was also made to the fact that the methods employed here have repeatedly served as models for adoption in other States. During the past year a similar application received from another State, for information in regard to our Registration System, and for specimens of the blanks and documents employed in connection therewith, has furnished like testimony in favor of the plans here adopted.

Respectfully submitted.

OLIVER WARNER,

Secretary of the Commonwealth.

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ERRATUM.

Page iii, line 4, for "*Percentage*," read "*Parentage*."

TWENTY-FIFTH REGISTRATION REPORT.

(1866.)

A quarter of a century has now passed since these Annual Reports of the social life of Massachusetts were commenced. The history of one generation, at least, is on record. The three most important events in the life of every individual within our borders if occurring during this period, are clearly set forth, attested, indexed, and filed away in the office of the secretary of the Commonwealth for reference and use by all who may seek such information. The records of family Bibles may be lost and destroyed, but here are the *originals*, which, like the deeds of real estate at the registry, establish the birth, marriage and death title of every man, woman and child in Massachusetts, to be used in law, or in any way in which it may be important to prove the fact. This to the individual is often of extreme value and importance; but to the Commonwealth of which he is a member, the aggregation of such a mass of facts gives rise to questions of the most interesting character, and furnishes answers to problems which have always perplexed the minds of men, and whose solution was not possible in any other way. "Public health is public wealth," expresses the practical view which Benjamin Franklin entertained of what is now known as the science of *Sanitary Economy*, resting on the secure foundation of vital statistics, but which in his day did not exist. In a letter of his, written in 1751, and entitled, "Observations concerning the increase of mankind, peopling of countries, &c.," he expresses his strong interest in the subject, and in the absence of definite figures and facts, gives his opinions upon the number and fertility of marriages, the probable increase of population, and many other kindred matters. Before the end of Franklin's century, the advance of civilization began to strongly influence the opinion of the world upon the needless sacrifice of life dependent upon the neglect of public health. Political economists saw the waste, and philanthropists saw the suffer-

ing; but the absence of vital statistics was a bar to much real progress, since no one could demonstrate what many intelligent minds perceived. At the present day every civilized country has adopted a system of registration more or less complete. By such records we can clearly see the comparative duration of life in different countries, and in the various parts of any country; the influence of density of population and of various occupations upon mortality; the immunity of certain districts from certain diseases, and are thus put upon the direct and certain road to a final discovery of their causes; the distribution of certain diseases between the sexes, the influence of seasons, and of age. Physicians gain through registration the invaluable guide to judicious treatment of disease which is based upon the epidemic constitution of the season, or the year,—a doctrine taught by Sydenham, but which in his day it was very difficult to apply, for the want of certain knowledge what the drift of the period really was. Now-a-days we find in the English medical journals weekly reports from the registrar's office pointing out the causes of all deaths in the great cities. In Boston, the city registrar informs the public every Saturday what diseases are prevailing; and we are so accustomed to such information that it is not always recognized how valuable it is, how difficult it would be to gain any approach to such definite knowledge in any other way, and how it disarms epidemics of imaginary terrors. It is an index pointing steadily at the essential fact, and as much to be depended upon as the thermometer or the wind-vane.

The classification and analysis of death-returns on a large scale have become a study by themselves, and susceptible of uses still greater and more varied as their number increases; and their value is perhaps equally great to statesmen and physicians. It has always been the reproach of medicine that its rules of practice are vague. This is a consequence of the complex organism with which it deals; but vital statistics, by taking a more comprehensive view of disease, by regarding the human mechanism, not in the individual but in communities, extinguishes many errors, and shows us the influences which effect public health in such a manner that we can claim to be exact in our conclusions. Yet in the interpretation of figures derived from vital statistics, it is important to remember the great liability to error in unskilful hands. Not every one can illustrate the truths of chemistry by

experiment. A defect in the apparatus, or a want of delicate tact in the management of materials, may apparently contradict the laws of nature and chemical affinity. Statistical figures are equally sensitive, and require equally careful treatment. An important difference between the two, however, is found in the fact that if the chemical experiment fails we know it; if the statistical experiment fails we very likely do not. Yet the laws governing both are equally definite. Much unmerited discredit has been brought upon statistical argument from the causes to which we have referred. It is even a common saying that "anything may be proved by figures." Yet how untrue this is may be readily seen by our constant and habitual reliance upon them in the common affairs of life. Commerce, all industrial interests, finance and political economy are seen to be directly dependent upon that grouping together in numerical form of large numbers of ascertained facts to which is given the name of statistics. The great interests of life insurance are securely based upon life-tables derived from just such facts as are presented in this volume. The medical profession is very largely indebted for the progress it is now making in the knowledge of disease to this department of science. No mere theory of disease can gain anybody's attention. To be considered at all, it must be based upon proved and admitted facts of the exact sciences, and upon numerous and careful observations. Thus many important rules of practice have been demonstrated and brought into the clear sunlight of universally admitted truth by statistical comparisons.

Public health is now recognized in Great Britain as one of the most useful departments of government, and the work which was there commenced only about thirty years ago has proceeded ever since with constantly increasing interest on the part of the people, and has been the means of already accomplishing very striking results. What is now doing there is made evident not only by the Registration Reports, but also by the annual reports of the medical officer of the Privy Council, Mr. John Simon, through whom a vast amount of information is collected in the most careful manner by medical officers who investigate by government authority all subjects bearing upon the health of communities, and visit and report upon all places whose condition can be improved by their labors. In this country the prevention of disease is becoming a popular subject, and its practicability is

recognized by many minds. Popular conviction will finally lead to a reform of many unwholesome conditions of cities and towns which are now permitted to exist ; but these conditions must first be proved dangerous by the logic of facts.

The first step in the prevention of disease is the discovery of its exciting causes, and these must be demonstrated so that all intelligent minds can clearly see them ; and this is a work not of a year and perhaps not of a generation. While dealing with the tables of this Report we are on firm ground. Facts like these are worth the finding, however troublesome it may be to collect them, and however wearisome to collate and digest them when grouped together in the form of figures. They must be examined with the single purpose of extracting any useful truth they may contain, and with a complete disregard of all theories or conjectures previously entertained. When this is done we are on the high road to useful and practical results, though the way may be a long one. All declamation on such subjects is worse than useless. When men tell us that here in Massachusetts the race is degenerating, and that women are physically inferior to their grandmothers, and they know the reason why, we must ask them to prove their first proposition before expatiating on their second. The final answer to such inquiries is to be looked for in the patient accumulation of observations made by those who seek truth for its own sake, wherever it may be found and wherever it may lead. Many valuable truths have already been discovered in the vital statistics of this and other countries during the past quarter of a century, and many are yet concealed which will one day see the light. In searching for them, hasty conclusions are to be avoided, and when perplexed with numerical statements which seem to lead to no useful result, we must be content to wait until additional observations, and time, the great corrector of errors, have had opportunity given them to separate the false from the true, and to bring what is now obscure into the clear light of day.

The last five Registration Reports of Massachusetts have had to deal with a state of war. Happily we have now returned to the condition of peace which existed in 1860. During the whole period, from 1861 to 1865 inclusive, the normal relations of births, deaths and marriages have been singularly perverted. The war and its influences entered every household, killing its members, preventing marriages, and in a still greater degree affecting births,

by removing from their families those who would otherwise have become the fathers of children. During 1865 this unusual condition ceased, and we have now, for the first time in six years, a state of peace, the effects of which on the natural increase of population are abundantly evident in the statements we have now to make.

The whole number of names registered in eighteen hundred and sixty-six was eighty-six thousand five hundred and seventy-eight. These are divided as follows: Thirty-four thousand and eighty-five (34,085) children were born alive, of which number seventeen thousand four hundred and thirty-eight (17,438) were males, and sixteen thousand six hundred and forty-seven (16,647) were females.

Fourteen thousand four hundred and twenty-eight (14,428) couples, or twenty-eight thousand eight hundred and fifty-six (28,856) persons were married. Of this number eight thousand six hundred and fourteen (8,614) were purely American marriages, and five thousand eight hundred and fourteen (5,814) were marriages either of foreigners exclusively, or in which one party was foreign.

The whole number of deaths was twenty-three thousand six hundred and thirty-seven (23,637,) of which eleven thousand six hundred and seventeen (11,617) were males, and twelve thousand and twenty (12,020) were females.

Comparing these numbers with the previous year we find the following changes, all of a most gratifying character:—

The births have increased by	.	.	.	3,836
The marriages have increased by	.	.	.	1,376
The deaths have diminished by	.	.	.	2,525

The number of births is greater than in any year since 1861. The number of deaths has not been so small since 1862. The number of marriages is greater than has ever before been recorded.

The natural increase of population, or the excess of births over deaths, for 1866, is ten thousand four hundred and forty-eight, and is 6,351 greater than in 1865.

The population of the State being, by the census of 1865, 1,267,031, one living child was born to every 37.17 persons; one

person in every 43·91 was married; one person in every 53·60 died.

The average number of births daily was	.	.	93·38
The average number of marriages daily was	.	.	39·53
The average number of deaths daily was	.	.	64·76

The percentage of births, deaths and marriages in 1866 was as follows:—

Births,	.	.	.	.	.	.	2·690
Persons married,	.	.	.	.	.	.	2·278
Deaths,	.	.	.	.	.	.	1·865

The excess of the birth-rate over the death-rate was ·825 of one per cent.

In the ten years preceding the war the deaths of females exceeded those of males. In 1861 the deaths of females were still slightly in excess. During the four following years of war the deaths of males predominated. We find in 1866 the deaths of females again exceeding those of males by 402.

The births have increased in every county except Dukes. The marriages have increased in every county except Barnstable and Nantucket, in Norfolk the number remaining the same. The deaths have diminished in every county except Middlesex.

The average age of those who died was 30·92 years, an increase of 2·24 years over 1865.

Throwing out Dukes and Nantucket, where the numbers are so small as to have no significance, the average age at death varies from 25·65 in Suffolk, where are found the greatest number of children of foreign parents, to 35·36 in Berkshire, 35·97 in Barnstable, 38·07 in Franklin, and 40·04 in Plymouth.

TABLE showing the Number of BIRTHS, MARRIAGES and DEATHS Registered in Massachusetts during the past ten years.

YEARS.	Births.	Marriages.	Deaths.	Excess of Births over Deaths.	Births to 100 persons.	Deaths to 100 persons.	Excess of Births in 100 persons.
1857, . .	35,320	11,739	21,280	14,040	3.01	1.82	1.19
1858, . .	34,491	10,527	20,776	13,715	2.89	1.74	1.15
1859, . .	35,422	11,475	20,976	14,446	2.92	1.73	1.19
1860, . .	36,051	12,404	23,068	13,983	2.93	1.87	1.06
1861, . .	35,445	10,972	24,085	11,360	2.86	1.96	.90
1862, . .	32,275	11,014	22,974	9,301	2.62	1.86	.76
1863, . .	30,314	10,873	27,751	2,563	2.42	2.22	.20
1864, . .	30,449	12,513	28,723	1,726	2.42	2.28	.14
1865, . .	30,249	13,051	26,152	4,097	2.38	2.06	.32
1866, . .	34,085	14,428	23,637	10,448	2.69	1.86	.83

The above table shows very clearly the effect of the return of peace. The deaths sink to the ratio of 1860. The births do not rise so immediately ; but when we remember the number of men in the prime of life who have been killed during the war, it is not surprising that this should be the case.

POPULATION.

Since the publication of the Registration Report for 1865, the census for that year, made by State authority, containing many valuable tables and much interesting information, has been issued from the Secretary's office. From this it appears that the total population of the State was 1,267,031. Males, 602,010; females, 665,021.

The numbers in the several counties in three successive semi-decades, together with the gain or loss since 1860, are shown in the following table:—

POPULATION by Counties for 1855, 1860, 1865.

COUNTIES.	1855.	1860.	1865.	Increase.	Decrease.
Barnstable, . .	35,442	35,990	34,610	—	1,380
Berkshire, . . .	52,791	55,120	56,944	1,824	—
Bristol,	87,425	93,794	89,395	—	4,399
Dukes,	4,401	4,403	4,200	—	203
Essex,	151,018	165,611	171,034	5,423	—
Franklin,	31,652	31,434	31,340	—	94
Hampden,	54,849	57,366	64,570	7,204	—
Hampshire, . . .	35,485	37,823	39,269	1,446	—
Middlesex, . . .	194,023	216,354	220,384	4,030	—
Nantucket, . . .	8,064	6,094	4,748	—	1,346
Norfolk,	94,367	109,950	116,306	6,356	—
Plymouth, . . .	61,495	64,768	63,107	—	1,661
Suffolk,	171,841	192,700	208,212	15,512	—
Worcester, . . .	149,516	159,659	162,912	3,253	—
Totals,	1,132,369	1,231,066	1,267,031	43,048	9,083

This census, it should be remarked, was taken just at the close of the war, when large numbers were still absent from their homes, many of whom, doubtless, escaped enumeration. The chief losses are in the seaboard counties, which furnished a large number of men for the naval service in addition to those who served in the army. The tendency of population during the past few years, however, has been strongly towards the manufacturing centres, and this will account in a degree for the increase of Suffolk, Hampden, Norfolk, Essex and Middlesex, at the expense of Bristol, Plymouth, Nantucket and Barnstable.

The following table, prepared for the State census report, by Dr. Edward Strong, gives an interesting view of the advance of Massachusetts in population during the past century:—

Population of Massachusetts, by Counties, at various periods during the past 100 years.

UNITED STATES CENSUSES.												ST. CENSUS.
												1865.
												1860.
Barnstable, .	1685, .	12,876	15,546	17,354	19,298	22,211	24,026	28,514	32,548	35,276	35,990	84,610
Berkshire, .	1761, .	8,640	17,952	30,213	33,670	35,787	35,670	37,706	41,745	49,591	55,120	56,944
Bristol, .	1685, .	21,801	26,700	31,709	33,880	37,163	40,908	49,592	60,165	76,192	93,794	89,395
Dukes County, .	1683, .	2,346	2,322	3,265	3,116	3,290	3,292	3,517	3,958	4,540	4,403	4,200
Essex, .	1643, .	43,524	50,923	57,913	61,196	71,888	74,655	82,859	94,987	131,300	165,611	171,084
Franklin, .	1811, .	5,087	10,294	21,743	26,300	27,421	29,418	29,639	28,812	30,870	31,434	31,340
Hampden, .	1812, .	8,307	13,274	19,133	23,462	24,421	28,021	31,639	37,866	51,283	57,866	64,570
Hampshire, .	1662, .	6,429	12,154	18,823	22,885	24,553	26,487	30,254	30,897	35,732	37,823	39,269
Middlesex, .	1643, .	34,896	40,121	42,737	46,928	52,789	61,472	77,961	106,611	161,383	216,354	220,384
Nantucket, .	1695, .	3,320	4,412	4,620	5,617	6,807	7,266	7,202	9,012	8,452	6,094	4,748
Norfolk, .	1793, .	17,682	22,124	28,878	27,210	31,245	36,471	41,972	53,140	78,892	109,950	116,303
Plymouth, .	1685, .	25,756	29,113	31,740	32,302	35,169	38,136	43,044	47,378	55,697	64,768	63,107
Suffolk, .	1643, .	15,962	3,208	18,792	25,786	34,381	43,940	62,163	95,773	144,517	192,700	208,212
Worcester, .	1731, .	32,827	46,437	56,807	61,192	64,910	73,625	84,355	95,313	130,789	159,659	162,912
Totals, .	. .	238,423	293,296	378,787	422,845	472,040	523,287	610,408	737,700	994,514	1,281,066	1,267,031

Several tables in the Census Report are given to show where the increase and decrease of population during the past fifteen years has occurred, and from these it appears that between 1855 and 1865 one hundred and sixty-six towns decreased in population. We called attention last year to the fact that between 1820 and 1840 eighty towns lost population, and between 1840 and 1850 the aggregate number of people in one hundred and fifty-nine towns was stationary, and these same towns gained only 5.06 per cent. between 1820 and 1840.

With reference to the increase and decrease during the past ten years, Dr. Strong says, in the Census Report: "The increase has been confined almost entirely to the manufacturing towns, or to those in the vicinity of Boston. In nearly all the counties the smaller towns are losing population, the larger cities and towns at the same time increasing, and the statement that all the larger towns are becoming manufacturing towns would be nearly the truth."

The following table, from the Census Report, shows the centralizing tendency in a striking way:—

The indirect effects of the war upon population are seen with more or less distinctness in all recent reports ; but the census shows the direct effect in a marked diminution of adult males between the ages of 20 and 60. Thus, instead of 266,049 in 1860, we find 249,806 in 1865. Their numbers had diminished by 16,243, in spite of a gain to the general population of 35,965. *This is a serious loss, coming as it does exclusively from the producing or " bread-winning " class, and its effect upon births will also be at once perceived.*

The following table, from the Census Report, shows the ages of the people of Massachusetts at several different periods :—

Ages of Population at Six Censuses, 1830-1865, and Percentage of the same.

YEARS.	Under 5.	5 to 10.	10 to 15.	15 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	60 to 70.	70 to 80.	80 to 90.	90 to 100.	Over 100.	Age unk.	Aggregate.
POPULATION AT EACH CENSUS.	1830, 80,177	70,525	63,005	67,240	119,116	73,596	50,367	33,464	23,308	12,748	4,288	520	5	-	610,408
	1840, 92,625	80,411	74,803	77,429	150,535	101,607	63,270	41,954	26,077	14,860	4,869	570	19	-	737,700
	1850, 112,997	101,845	97,163	104,912	209,162	142,542	95,308	59,633	36,550	17,787	5,755	590	13	1,193	994,514
	1855, 132,944	115,862	110,098	117,047	235,678	165,046	111,500	71,829	42,423	20,810	6,138	634	19	2,341	1,132,369
	1860, 151,289	128,526	114,348	120,800	244,519	183,705	125,470	81,453	49,873	23,536	6,815	715	16	1	1,231,066
1865, 133,943	143,391	126,691	117,171	117,171	225,506	185,543	142,831	90,446	59,216	26,675	7,563	728	25	1,302	1,267,031
PERCENTAGE OF POPULATION AT EACH AGE.	1830, 13.29	11.69	11.27	11.15	19.74	12.20	8.35	5.55	3.86	2.11	.71	.08	-	-	100.00
	1840, 12.71	11.03	10.26	10.62	20.64	13.93	8.68	5.76	3.58	2.04	.67	.07	-	-	100.00
	1850, 11.46	10.34	9.86	10.65	21.23	14.46	9.67	6.05	3.71	1.81	.58	.06	-	.12	100.00
	1855, 11.74	10.23	9.72	10.34	20.81	14.58	9.84	6.34	3.75	1.84	.54	.06	-	.21	100.00
	1860, 12.28	10.43	9.28	9.81	19.82	14.91	10.19	6.61	4.05	1.91	.55	.05	-	.03	100.00
1865, 10.57	11.32	10.00	9.25	9.25	17.80	14.64	11.27	7.61	4.67	2.10	.60	.06	-	.10	100.00

Ever since the first census of 1765 there has been found an excess of females over males in Massachusetts. The disparity has increased somewhat rapidly since 1850, when the difference in numbers amounted to 17,264.

In 1855 it was	.	.	.	.	.	.	.	.	31,629
1860 it was	.	.	.	.	.	.	.	.	36,959

But in 1865, this had increased to 62,420, the percentages being,

Males,	.	.	.	.	.	.	.	.	47.52
Females,	.	.	.	.	.	.	.	.	52.48

It would be very interesting to recognize the different races and their relative proportions in the population of Massachusetts, but we can see no sure and certain way of arriving at this result. Previous to 1825 nearly all the people of the State were the descendants of emigrants from England, most of whom came over in the seventeenth and early part of the eighteenth century. Probably few communities of equal size were more homogeneous than the inhabitants of Massachusetts in the half century following the revolutionary war. About 1830 the Irish began to pour in upon us; then the Germans and British Americans; and very recently the natives of the Western Islands, classed as Portuguese. The Irish have prospered and multiplied, intermarrying with Americans to some extent, and in the second and third generation they cannot readily be distinguished from the descendants of the Puritans. It is not possible for the census-takers to distinguish race, and if those whom they interrogate claim to be Americans, as they certainly are in one sense, they must have their claim allowed. We can only distinguish with certainty the birthplace of the inhabitants, and sometimes, but not always, the birthplace of their parents. Classed according to nativity, the census of 1865 shows that 999,976 of our people were born in the United States, 265,486 were born in other countries, and the birthplace of 1,569 was unknown. Of the 999,976 Americans, 828,156 were born in Massachusetts, and 171,720 in other of the United States.

Of the 265,486 foreign born, 183,177, or more than two-thirds of the whole number, were born in Ireland, 32,390 in British America, 25,229 in England, 11,125 in Germany, 6,967 in Scotland, 1,883 in Portuguese possessions, and 1,110 in France.

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The distribution and relative strength to the whole population of the foreign born in Massachusetts at three different periods, are shown in the following table from the Census Report:—

Numbers and Percentage of Foreign Population at the Periods, 1855, 1860, 1865.

STATE AND COUNTIES.	FOREIGN POPULATION.			PERCENTAGES.		
	1855.	1860.	1865.	1855.	1860.	1865.
STATE, . . .	245,263	260,114	265,486	21·66	21·12	20·95
Barnstable, . . .	1,685	1,551	1,596	4·75	4·31	4·61
Berkshire, . . .	9,886	9,810	11,275	17·78	17·80	19·80
Bristol, . . .	15,711	16,693	15,076	17·97	17·79	16·86
Dukes, . . .	125	191	119	2·84	4·33	2·83
Essex, . . .	26,827	29,494	31,817	17·76	17·81	18·60
Franklin, . . .	2,131	2,330	2,559	6·73	7·41	8·16
Hampden, . . .	11,890	12,129	13,265	21·68	21·14	20·54
Hampshire, . . .	4,733	5,301	6,638	13·33	14·01	16·90
Middlesex, . . .	47,552	50,238	48,840	24·50	23·49	22·16
Nantucket, . . .	455	292	207	5·64	4·78	4·36
Norfolk, . . .	28,544	26,257	26,894	24·95	23·88	23·12
Plymouth, . . .	6,441	6,691	5,994	10·47	10·33	9·50
Suffolk, . . .	65,468	67,261	68,966	38·09	34·91	33·12
Worcester, . . .	29,315	31,876	32,240	19·61	19·96	19·79

From this it would appear that the proportion of foreign born is diminishing. That the proportion of foreign *race* is increasing seems, however, very probable, although it is not readily demonstrated for the reasons before given. The race which originally peopled New England is still leaving the old homesteads, as it has been doing for a century past, and founding new States in the far West, or seeking their fortunes in foreign lands.

Some idea of the extent of this emigration from Massachusetts, as well as the immigration to Massachusetts from other parts of the Union, may be obtained from the following table, compiled from the census of the general government for 1850 and 1860. It proves, at least, what a roving people we are:—

Number of Natives of Massachusetts in other States, and of Natives of other States in Massachusetts, 1850 and 1860.

EMIGRATED TO,—FROM MASSACHUSETTS.		STATES AND TERRITORIES.	EMIGRATED FROM,—TO MASSACHUSETTS.	
1850.	1860.		1850.	1860.
654	753	Alabama,	71	112
174	217	Arkansas,	10	23
4,760	12,165	California,	7	289
11,366	14,674	Connecticut,	15,602	15,580
113	214	Delaware,	90	124
235	295	Florida,	32	57
594	773	Georgia,	237	235
9,230	19,053	Illinois,	165	534
2,678	3,443	Indiana,	60	123
1,251	6,214	Iowa,	12	102
—	10,997	Kansas,	—	11
665	926	Kentucky,	75	118
1,020	1,350	Louisiana,	179	198
16,535	13,822	Maine,	29,507	43,031
2,421	1,032	Maryland,	744	1,128
8,167	9,873	Michigan,	122	260
92	3,719	Minnesota,	—	58
339	309	Mississippi,	34	54
1,103	2,702	Missouri,	58	121
18,495	19,973	New Hampshire,	39,592	44,035
1,494	2,819	New Jersey,	778	1,326
55,773	50,004	New York,	14,483	18,508
261	324	North Carolina,	196	216
18,763	16,313	Ohio,	593	847
187	535	Oregon,	—	15
7,330	7,777	Pennsylvania,	1,881	2,297
11,888	13,965	Rhode Island,	11,414	13,326
407	322	South Carolina,	224	233
331	680	Tennessee,	25	53
414	660	Texas,	10	34
15,059	11,913	Vermont,	17,646	18,652
1,193	1,431	Virginia,	796	1,391
6,285	12,115	Wisconsin,	32	277
331	514	District of Columbia,	196	260
—	1,400	Colorado,	} 9	} 9
—	286	Nebraska,		
350	523	Utah,		
—	326	Washington Territory,		
24	72	New Mexico,		
—	20	Dakotah,		
199,582	244,503	Totals,	134,830	160,637

B I R T H S .

The following table exhibits the number of births which have been registered in Massachusetts during the past fifteen years:—

Y E A R .	Born alive.	Stillborn.	Y E A R .	Born alive.	Stillborn.
1852, . . .	29,802	598	1860, . . .	36,051	1,062
1853, . . .	30,920	568	1861, . . .	35,445	1,017
1854, . . .	31,997	558	1862, . . .	32,275	907
1855, . . .	32,845	725	1863, . . .	30,314	903
1856, . . .	34,445	695	1864, . . .	30,449	856
1857, . . .	35,320	739	1865, . . .	30,249	859
1858, . . .	34,491	747	1866, . . .	34,085	1,046
1859, . . .	35,422	733			

The population being 1,267,031, the birth-rate for 1866 (excluding stillborn,) is 2·69 per cent. There was one living birth to every 37·17 persons; or, if we include stillborn, one birth to every 36·06 persons.

It is of great importance to discover, if possible, whether this number of births is such as might reasonably be expected in a year of peace and general prosperity. In England, during the twenty-six years, 1838–1863, with a population of about eighteen millions, the average birth-rate was 3·33. In Massachusetts it has never been so high. In the seven years, 1852–1858, it was 2·90. In the five years immediately preceding the war, 1856–1860, it was 2·85. 1861 was a transition period, and the birth-rate was 2·85. During the four years of war, 1862–1865, the birth-rate was 2·46. We find it now rising, not to the old standard of 2·85 or 2·90, but to 2·69. Why is this? An explanation may be found by comparing the numbers of people of an age to have

children who existed in Massachusetts in 1860 and 1865. Thus, in 1860, there were between the ages of fifteen and fifty, 323,119 males and 350,927 females. In 1865 there were between these ages, 307,784 males and 363,267 females. There was a relative loss of 15,335 men, and a relative gain of 12,340 women. In other words, the disparity between the sexes at marriageable ages had increased from 27,808 in 1860, to 55,483 in 1865. If we can imagine a compulsory union in 1866 of all unmarried persons in Massachusetts between the ages of fifteen and fifty, 55,483 women would remain *for whom no partners existed*, and this number is twice as great as it would have been but for the war. These considerations seem to be sufficient to account for a deficiency of 2,265 births in 1866, that being the number required to bring the birth-rate up to 2.87, which we may regard as the standard rate from 1852 to 1860.

In judging of the state of a community by its vital statistics, it is always to be remembered that its birth-rate, taken by itself, is of little value as an index to its prosperity, healthfulness, and the enjoyment of normal conditions. The true tests are the death-rate, and the difference between the birth-rate and death-rate. This difference gives the natural increase, supposing the community to be fixed, and subject to no changes from emigration or immigration. The birth-rate is generally found high in communities subject to unwholesome influences. A crowded and dirty and degraded population is usually a prolific one. St. Giles, in London, produces a larger percentage of children than the rural districts, and also a larger percentage than the average of all England. The same is true of Lancashire, with its crowded factory towns, and Liverpool, the most unhealthy city in England.

On the other hand, a community in the enjoyment of ease and comfort, possessing the means of maintaining health by *cleanliness* in all its forms (including in this term clean air, water and food,) and particularly a community which is intelligent, and whose brain is active and employed, will not have a high birth-rate, but its death-rate will be universally found to be low, and the number of children which it brings to maturity greater than one in which they are more abundant, and in which healthful conditions are wanting.

The birth-rate of Massachusetts cannot fairly be contrasted with that of any European country, for several reasons. Our people

are, as regards race, heterogeneous. The people of England and of France and of Germany are each homogeneous, or if there was formerly a diversity of race, time has accomplished a fusion such as cannot exist here while immigration continues. All strata of society are in each of the countries of Europe of essentially the same stock. With us, however, the upper and middle classes are almost exclusively of one race, enjoying the comforts of life, living in good houses, well clothed and fed, and with habits of personal cleanliness. They are also a brain-working people, if such a people exists on the face of the earth. The lower classes of society in Massachusetts, those who do the hard work, the unskilled laborers, the hewers of wood and drawers of water, are almost exclusively foreigners, and chiefly Irish. They live for the most part in crowded neighborhoods, and under conditions well known to be unfavorable to health and long life.

Their birth-rate is seen in certain wards of the city of Boston, where this class largely predominates. In Ward 7, the present year, it was 4.27, and in Ward 12, 3.60. This, it will be observed, is very high, the rate for the State being 2.69; and from such observations it has often been suggested that the Celtic race is more prolific in America than the Anglo-American. This may be so, but it is well for us to note that in St. Giles, and in Lancashire, and wherever in England is found a crowded and dirty population, there the birth-rate is also much above the average, notwithstanding the race is the same throughout all classes of society.

Our Anglo-Americans are also migratory, while the people of Europe do not wander about their own country, but remain for the most part where they were born. We have seen what numbers come to Massachusetts from other parts of the Union, and what still greater numbers are constantly going from us to carry civilization and to build up new States in the most distant parts of our territory. For these reasons the birth-rate of Massachusetts cannot fairly be compared with that of a stationary and homogeneous community. Its natural increase is also less distinctly seen, but taking the six years before the war, it stands 1.09 per cent., against 1.10 in England. This increase, we do not doubt, will continue when time has been allowed for recovery from the effects of the war, by a restoration of something like the old relations between the numbers of the sexes.

It may be interesting to see what so wise a man as Benjamin Franklin thought about these and similar matters when vital statistics were unknown. In 1751, he writes as follows: "Tables of the proportion of marriages to births, of deaths to births, of marriages to the number of inhabitants, &c., formed on observations made upon the bills of mortality, christenings, &c., of populous cities, will not suit countries; nor will tables formed on observations made on full-settled old countries, as Europe, suit new countries, as America. For people increase in proportion to the number of marriages, and that is greater in proportion to the ease and convenience of supporting a family. When families can be easily supported, more persons marry and earlier in life. Great part of Europe is full settled with husbandmen, manufacturers, &c., and therefore cannot now much increase in people. America is chiefly occupied by Indians, who subsist mostly by hunting. But as the hunter, of all men, requires the greatest quantity of land from whence to draw his subsistence (the husbandman subsisting on much less, the gardener on still less, and the manufacturer requiring least of all,) the Europeans found America as fully settled as it well could be by hunters; yet these having large tracts were easily prevailed on to part with portions of territory to new comers, who did not much interfere with the natives in hunting, and furnished them with many things they wanted. Land being thus plenty in America, and so cheap as that a laboring man that understands husbandry can in a short time save money enough to purchase a piece of new land sufficient for a plantation, whereon he may subsist a family, such are not afraid to marry; for if they even look far enough forward to consider how their children, when grown up, are to be provided for, they see that more land is to be had at rates equally easy, all circumstances considered. Hence marriages in America are more general, and more generally early than in Europe; and if in Europe they have but four births to a marriage, (many of their marriages being late,) we may here reckon eight; of which, if one-half grow up, and our marriages are made, reckoning one with another, at twenty years of age, our people must at least be doubled every twenty years." Further on he says: "A nation well regulated is like a polypus; take away a limb, its place is soon supplied; cut it in two, and each deficient part shall speedily grow out of the part remaining. Thus, if you have room and subsistence enough

as you may by dividing make ten polypuses out of one, you may, of one, make ten nations, equally populous and powerful; or, rather, increase a nation tenfold in numbers and strength."

Has not Massachusetts been increasing these last hundred years like Franklin's polypus? And if the population within our State boundaries has not doubled every twenty years, would not his prediction prove to be true if we counted the territory which has been settled by natives of our soil?

The statement that in Dr. Franklin's opinion people married in the middle of the last century at the age of twenty, and had an average of eight children to a marriage, of which *about one-half grew up*, is a very interesting one, and as near to the truth as we are likely to get.

LIVING BIRTHS, and numbers living to one Birth in the different Counties in 1866.

COUNTIES.	Population in 1865.	Living Births.	Numbers living to one Birth.
Barnstable,	34,610	796	43-48
Berkshire,	56,944	1,587	35-88
Bristol,	89,895	2,291	39-02
Dukes and Nantucket,	8,948	144	62-14
Essex,	171,034	4,638	36-87
Franklin,	31,340	612	51-21
Hampden,	64,570	1,792	36-03
Hampshire,	39,269	973	40-36
Middlesex,	220,384	5,973	36-89
Norfolk,	116,306	3,114	37-35
Plymouth,	63,107	1,624	38-86
Suffolk,	208,212	6,027	34-55
Worcester,	162,912	4,514	36-09
Whole State,	1,267,031	34,085	37-17

From this table it appears that the counties were prolific in the following order: Suffolk, Berkshire, Hampden, Worcester, Essex, Middlesex, Norfolk, Plymouth, Bristol, Hampshire, Barnstable, Franklin, Dukes and Nantucket. The counties containing large towns and cities, as usual, produce the largest percentage of children to population, the exception this year being Berkshire. The island counties seem to be always far behind. The census shows in those counties a much larger proportion of persons past middle age. In Dukes and Nantucket, 26·3 per cent. of the population are over 50 years of age; in the State at large, 15·5 per cent. This is doubtless owing to emigration of the young people.

The following table shows the births in the several quarters of the year, and the birth-rate for each quarter, supposing it to have been maintained through the year:—

BIRTHS in Massachusetts.—*Quarterly Rates.*

PERIOD.	Numbers.	Percentage.
Quarter ending with March,	7,206	2·275
June,	8,012	2·529
September,	9,251	2·920
December,	9,616	3·036
Whole year,	34,085	2·690

From this it appears that there were 3,649 more births in the last half of the year than in the first half; that there was an increase in each quarter over the preceding quarter, and that the two middle quarters exceeded the two extreme quarters. A comparison in these respects with previous years is given in the next table.

BIRTHS arranged in periods of Six Months.

YEARS.	Two first Quarters.	Two last Quarters.	Two middle Quarters.	Two extreme Quarters.	Extreme Difference.
1861, . . .	16,644	18,756	17,978	17,427	2,112
1862, . . .	15,808	16,938	16,058	16,188	1,630
1863, . . .	14,338	15,952	15,022	15,268	1,614
1864, . . .	14,052	16,866	15,190	15,228	2,814
1865, . . .	14,186	16,118	15,090	15,159	1,977
1866, . . .	15,218	18,867	17,263	16,822	3,649
Average, . .	14,950	17,165	16,097	16,015	2,215

It will be seen that the difference between the first two and last two quarters is a very unusual one.

Sex.—The next table exhibits the number and proportions of the sexes for fifteen years.

					1866.	1852-65.
Born alive,	{	Males,			17,394	235,755
		Females,			16,608	222,459
		Not stated,			88	1,828
Males to 100 Females,					104·7	105·9
Stillborn, . .	{	Males,			545	5,944
		Females,			410	3,992
		Not stated,			91	1,998
Males to 100 Females,					132·9	148·9
Illegitimate,	{	Males,			147	1,196
		Females,			131	1,222
		Not stated,			8	28
Males to 100 Females,					112·2	97·9

The proportion of males to females is this year a little below the average. Males* greatly outnumber females, as usual, among

the still-births. The illegitimate children have generally shown an excess of females; this year it is reversed.

BIRTHS by Counties.—*Proportion of Males to Females.*

COUNTIES.	Males, per cent.	Females, per ct.	Males to 100 Females.	COUNTIES.	Males, per cent.	Females, per ct.	Males to 100 Females.
Barnstable, .	51.40	48.60	106	Hampshire, .	50.98	49.02	104
Berkshire, .	53.12	46.88	113	Middlesex, .	50.88	49.12	103
Bristol, .	51.03	48.97	104	Norfolk, .	50.58	49.42	102
Dukes & Nantucket, .	49.31	50.69	97	Plymouth, .	51.94	48.06	108
Essex, .	52.90	47.10	112	Suffolk, .	50.04	49.96	100
Franklin, .	51.55	48.45	106	Worcester, .	50.45	49.55	102
Hampden, .	51.93	48.07	108	Whole State,	51.16	48.84	105

The proportions are quite different in the counties. These variations are not of importance, however, and depend apparently only on the numbers in each county for each year being insufficient to prove the general law which furnishes a nearly constant result in the State at large, and which is equally true of the counties when several years are taken together. Thus, last year Berkshire showed a smaller proportion, and Dukes and Nantucket a larger proportion of male births than the average. This year it is reversed in both counties.

EXHIBIT OF THE PARENTAGE OF THE CHILDREN BORN ALIVE, IN SEVERAL CLASSES, WHICH WERE REGISTERED IN THE SEVERAL COUNTIES OF MASSACHUSETTS DURING THE YEAR 1866.

	Entire State.	Barnstable	Berkshire.	Bristol.	Dukes and Nantucket.	Fitch.	Franklin.	Hamden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
Aggregate, { Totals, . . . Males, . . . Females, . . . Unknown, . . .	34,085 17,394 16,603 88	796 404 382 10	1,587 842 743 2	2,291 1,165 1,118 8	144 71 73 -	4,638 2,446 2,178 14	612 315 296 1	1,792 927 858 7	973 495 476 2	5,973 3,030 2,925 18	3,114 1,572 1,536 6	1,624 840 777 7	6,027 3,015 3,010 2	4,514 2,272 2,231 11
PARENTAGE.														
American, . . .	15,014	642	731	1,200	118	2,355	413	720	513	2,453	1,222	1,098	1,645	1,904
Foreign, . . .	15,989	93	704	925	9	1,833	166	983	883	3,054	1,574	433	3,550	2,332
American Father and Foreign Mother,	1,316	27	45	75	3	219	11	47	36	223	136	45	342	107
Foreign Father and American Mother,	1,482	28	74	73	10	217	17	62	26	220	166	40	418	131
Not stated, . . .	284	6	33	18	4	14	5	30	15	23	16	8	72	40
Of Plurality Cases, (included above.)														
Whole No., { Aggregate, . . . Males, . . . Females, . . .	708 362 346	14 5 9	46 29 17	38 20 18	6 4 2	116 64 52	10 6 4	36 25 11	22 12 10	132 69 63	70 39 31	40 19 21	*93 36 57	*85 34 51
Americans, { Males, . . . Females, . . .	155 140	5 5	13 7	6 4	3 1	38 32	4 4	3 1	6 4	21 19	18 16	13 15	11 11	14 21
Foreign, { Males, . . . Females, . . .	187 160	- 2	14 8	13 11	- -	23 13	2 -	22 10	6 2	47 35	17 11	4 4	21 38	18 26
Am. Father, { For. Mother, { Males, . . . Females, . . .	10 18	- 2	1 1	- -	- -	2 4	- -	- -	- 2	- 4	2 2	- -	3 3	2 -

The preceding table shows that 975 more children were born to parents exclusively foreign than to parents exclusively American; that 2,798 children were born of mixed parentage, and that the difference between those of purely American parentage and those of foreign and mixed parentage, was 3,773.

Percentages of American and Foreign LIVING BIRTHS during the past Eighteen Years.

	Average of five y'rs. 1849-53.	Average of five y'rs. 1854-58.	Average of five y'rs. 1859-63.	1864.	1865.	1866.
American, . . .	63.02	50.38	46.06	44.91	44.53	44.42
Foreign, . . .	35.96	44.12	46.89	47.62	47.40	47.30
One party foreign, .	1.02	5.50	7.05	7.47	8.07	8.28

The rapid relative increase of foreign births, which was going on during the fifteen years preceding 1864, is checked; and the two races, in so far as they can be distinguished by such classification, are now increasing equally, or very nearly so, the difference in three years being only .17 of one per cent. The proportion of mixed births is, however, growing slightly greater each year, the difference amounting in three years to .81 of one per cent.

The foreign-born population of Massachusetts by the census of 1865 was 265,486; the American population, 999,976, and the population of unknown nativity, 1,569. These latter it is not easy to divide. It seems probable that very many were of foreign birth, yet if divided in proportion to the numbers whose nativity is given, about four-fifths would be called Americans. It seems nearer the probable truth to divide them equally. We have then 1,000,761 Americans, and 266,270 foreigners. And they produced in 1866,—the Americans, 16,555 children, the foreigners, 17,530 children; that is to say, a child was born to every 60.45 Americans, and to every 15.19 foreigners,—the latter class being four times as productive as the former. It would be interesting to know the proportion of the sexes, and the numbers at marriageable ages of the American and foreign population, but these facts are not given by the census. We must also not fail to

remember that the children born on our soil, *of whatever parentage*, help to make up the million of native Americans above referred to.

That the foreigners are more prolific than the Americans seems to be proved. That they are more prolific *because* they are of another race, is certainly not proved. They live under conditions which have been found everywhere to promote fertility, and it is extremely probable that if the two classes could exchange places their productiveness would be reversed. Of the mortality of the Americans and foreigners (the really important point in all questions relating to their probable future influence,) we shall have occasion to speak when considering deaths.

Plural Births.—The whole number was 708. Two women gave birth to triplets (one in Suffolk, the other in Worcester County,) and three hundred and fifty-one women gave birth to twins in 1866. The parentage was as follows: American, 41·81 per cent.; foreign, 49·15 per cent., and mixed, 9·04 per cent. The sexes conform very nearly to those of all the births, being 51·13 males to 48·87 females.

The frequency of plural births in a series of years, shows in a striking way the operation of general laws of nature. Thus, in ten years, 1856–65, one case of twins occurred to every 104 births, and one case of triplets to every 10,453 births. In 1866, one case of twins occurred to every 96 births, and one case of triplets to every 16,865 births.

Illegitimates.—The number was 281, or ten more than last year; 155 of American, and 126 of foreign origin. It is supposed that all of these cases are not reported.

Stillborn.—The number reported (1,046) was above the average of the past ten years, 187 more than last year, though less than in 1860. It is very probable that many are concealed. The percentage of stillborn to the whole number of births in 1866 was 3·07, or one stillborn to every 33 births.

MARRIAGES.

The number in 1866 was 14,428, the largest ever reported in Massachusetts, and 1,376 more than in 1865.

The number for nine years is given in this table:—

MARRIAGES registered in Massachusetts, 1858–1866.

	1866.	1865.	1864.	1863.	1862.	1861.	1860.	1859.	1858.	Average, '58-65.
Marriages, . . .	14,428	13,052	12,513	10,873	11,014	10,972	12,404	11,475	10,527	11,604
Persons married,	28,856	26,104	25,026	21,746	22,028	21,944	24,808	22,950	21,054	23,208

There were 2,824 more marriages in 1866 than the average of the preceding eight years. There was one marriage to every 87·82 persons, or one person was married to every 43·91. The percentage of marriages to population was 1·139. In 1865 it was 1·030. The large increase in marriages since the close of the war is an assurance of general prosperity, and of the hopeful condition of the people. In 1863, when our national affairs looked darkest, and the calls for more soldiers were most frequent, marriages fell to 10,873. Three years later we find them increased 33 per cent.

MARRIAGES in Massachusetts.—*Quarterly Aggregates and Percentages.*

	1st quarter.	2d quarter.	3d quarter.	4th quarter.
Year 1866,	3,057	3,751	8,151	4,441
Years 1856-66,	28,151	32,927	30,004	38,340
Quarterly percentages, 1866, .	21·28	26·05	21·88	30·84
Quarterly percentages, 1856-66,	21·75	25·44	23·19	29·62

The last quarter always returns the largest number of marriages, as "Thanksgiving" in November is a favorite season for

this ceremony. In 1865 there was a progressive increase through the four quarters; but in 1866 there is a return to the usual average proportions, the last quarter being greatest, the second quarter next, the third quarter next, and the first quarter least in numbers. The smallest number in any month is, as usual, in March.

MARRIAGES of persons under thirty-five years of age, during eight years, 1859-66.—*Percentages.*

	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.
Males, .	84.17	83.67	83.45	81.76	80.92	82.42	81.60	83.18
Females, .	91.26	94.18	91.04	91.04	90.77	91.93	90.60	91.57

The percentage of males marrying under thirty-five, it will be perceived, has returned to about the point at which it stood before the war. The percentage of females has not been affected.

MARRIAGES in Massachusetts.—*Rates by Counties.*

COUNTIES.	MARRIAGES TO 100 LIVING.			PERSONS LIVING TO 1 MARRIAGE.		
	1859-64.	1865.	1866.	1859-64.	1865.	1866.
Barnstable, .	0.746	1.095	1.038	123	91	96
Berkshire, .	0.820	0.969	1.001	120	103	88
Bristol, . .	0.854	1.001	1.085	116	100	92
Dukes, . . .	0.816	1.024	1.048	123	98	95
Essex, . . .	0.937	1.031	1.206	107	97	83
Franklin, . .	0.729	0.912	0.960	135	109	104
Hampden, . .	1.219	1.089	1.256	83	92	79
Hampshire, .	0.862	0.929	1.176	117	108	85
Middlesex, .	0.863	0.916	1.045	117	109	96
Nantucket, .	0.730	1.159	1.095	145	86	91
Norfolk, . .	0.755	0.788	0.788	133	127	127
Plymouth, .	0.746	0.952	0.966	135	105	103
Suffolk, . .	1.320	1.398	1.453	78	69	68
Worcester, .	0.912	0.958	1.143	110	104	87
Whole State,	0.865	1.030	1.139	116	97	88

The highest marriage-rate, as well as the highest birth-rate, are found in Suffolk County. The proportion of marriages in Norfolk County seems remarkably small, and we can only account for it by supposing that a large number of its people are married in the city of Boston. There has been an increase of marriages in every county except Barnstable and Nantucket, where the differences are trifling, and in Norfolk, where the number remains the same as last year.

The marriage-rate for the State is 1.139. One marriage took place for every 88 living, or one person was married for every 43.91 living.

The social condition of those who married in 1866 is shown, in so far as they were stated by the returns, in the following tables :

AGES at Marriage of 14,848 MEN and of 14,311 WOMEN.

SEX.	Under 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	Over 90
Men, . . .	288	5,276	4,564	1,808	904	511	882	225	175	118	53	30	11	3			
Women, . . .	2,778	6,423	2,869	1,036	561	303	157	81	50	19	23	9	2	-			

AGES at Marriage of 11,832 BACHELORS and of 12,554 MAIDS.

Bachelors, . . .	279	5,195	4,292	1,356	453	141	72	23	17	4	-	-	-	-			
Maids, . . .	2,753	6,195	2,475	654	274	112	50	24	11	4	2	-	-	-			

AGES at Marriage of 2,465 WIDOWERS and of 1,718 WIDOWS.

Widowers, . . .	-	69	259	443	451	366	308	202	158	112	53	30	11	3			
Widows, . . .	19	218	382	374	286	190	107	57	38	15	21	9	2	-			

It appears from these tables that the average age of all the men who married during the year was 29·1 years, and of all the women 25 years.

The average age of men marrying for the first time was 26·4, of women marrying for the first time was 23·6 years.

Social or Conjugal Condition of Persons Married in Massachusetts in the year 1866.

MALES.		FEMALES.				
Number of the Marriage.	Whole Number.	First Marriage.	Second Marriage.	Third Marriage.	Fourth Marriage.	Unknown.
Whole Number, .	14,428	12,608	1,683	52	2	83
1st Marriage, . . .	11,867	11,094	766	6	1	—
2d Marriage, . . .	2,283	1,432	817	33	1	—
3d Marriage, . . .	180	77	91	12	—	—
4th Marriage, . . .	14	5	8	1	—	—
5th Marriage, . . .	1	—	1	—	—	—
Unknown, . . .	83	—	—	—	—	83

The preceding table shows that two women were married for the fourth time, and one of them to a bachelor; that one man married for the fifth time; that six widows who had each lost two husbands married bachelors; and that five men who had each lost three wives married maids.

The conjugal condition of parties married during the past four years is shown by percentages, as follows:—

	First Marriage.	Second Marriage.	Third Marriage.	Fourth Marriage.	Fifth Marriage.	Not stated.
1863, { Males, .	81·89	16·06	1·21	·12	—	·73
{ Females, .	88·05	10·80	·38	·04	—	·73
1864, { Males, .	81·78	15·71	1·78	·12	·02	·59
{ Females, .	87·26	11·50	·60	·05	—	·59
1865, { Males, .	81·10	16·37	1·76	·14	·01	·62
{ Females, .	86·14	12·70	·52	·02	—	·62
1866, { Males, .	82·24	15·80	1·31	·08	·01	·56
{ Females, .	87·38	11·66	·36	·01	—	·59

The next table gives the ages at which certain youthful marriages were contracted. They are 536 in number. It will be observed that in some instances the youth was only on one side:—

Certain Marriages.—1866.

AGES OF MALES.				Totals.	AGES OF FEMALES.								
					13.	14.	15.	16.	17.	18.	19.	25.	30.
Totals,	.	.	.	536	1	5	37	140	329	14	8	1	1
17,	.	.	.	7	-	1	1	1	1	3	-	-	-
18,	.	.	.	28	-	-	1	7	8	7	4	1	-
19,	.	.	.	56	-	-	5	8	35	4	4	-	-
20,	.	.	.	52	1	1	7	21	21	-	-	-	1
21,	.	.	.	87	-	2	5	20	60	-	-	-	-
22,	.	.	.	74	-	-	1	18	55	-	-	-	-
23,	.	.	.	67	-	-	4	14	49	-	-	-	-
24,	.	.	.	42	-	-	1	12	29	-	-	-	-
25,	.	.	.	34	-	-	6	13	15	-	-	-	-
26,	.	.	.	25	-	-	2	8	15	-	-	-	-
27,	.	.	.	16	-	-	2	5	9	-	-	-	-
28,	.	.	.	16	-	-	1	6	9	-	-	-	-
29,	.	.	.	5	-	-	-	1	4	-	-	-	-
30,	.	.	.	14	-	-	-	4	10	-	-	-	-
31,	.	.	.	8	-	-	1	-	2	-	-	-	-
32,	.	.	.	2	-	-	-	1	1	-	-	-	-
33,	.	.	.	1	-	-	-	-	1	-	-	-	-
34,	.	.	.	2	-	-	-	-	2	-	-	-	-
35,	.	.	.	1	-	-	-	1	-	-	-	-	-
36,	.	.	.	1	-	-	-	-	1	-	-	-	-
39,	.	.	.	1	-	1	-	-	-	-	-	-	-
44,	.	.	.	2	-	-	-	-	2	-	-	-	-

NATIVITY OF PERSONS MARRIED in the several Counties of the State.—Numbers. 1866.

	Whole State.	Barnstable.	Berkshire.	Bristol.	Dukes.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Nantucket.	Norfolk.	Plymouth.	Suffolk.	Worcester.
Marriages,	14,428	359	648	970	44	2,063	301	811	462	2,304	52	916	610	3,025	1,863
American,	8,485	313	414	587	37	1,325	263	483	300	1,289	50	525	507	1,252	1,140
Foreign,	4,017	24	156	258	1	466	21	229	121	697	—	264	57	1,196	527
American Groom and Foreign Bride, .	767	7	26	47	3	84	4	40	15	116	2	55	9	295	64
Foreign Groom and American Bride, .	939	12	40	52	2	142	7	35	17	177	—	67	29	259	100
Nativities not stated,	220	3	12	26	1	46	6	24	9	25	—	5	8	23	32

MARRIAGES according to Nativity.—*Percentages.*

YEARS.	American.	Foreign.	Am. Groom and For. Bride.	For. Groom and Am. Bride.	Not stated.
1862,	62.38	26.56	4.54	4.08	2.44
1863,	61.84	27.85	4.44	5.14	1.23
1864,	60.53	28.32	4.52	6.08	.55
1865,	59.58	29.29	4.49	6.16	.48
1866,	58.81	27.84	5.32	6.51	1.52

NATIVITY of PERSONS Married during Eight Years.—*Numbers.*

	1859.	1860.	1861.	1862.	1863.	1864.	1865.	1866.
Whole number of Marriages, . . .	11,475	12,404	10,972	11,014	10,873	12,513	13,051	14,428
American, . . .	6,575	7,144	6,330	6,871	6,670	7,574	7,776	8,485
Foreign, . . .	3,650	3,918	3,439	2,926	3,028	3,544	3,823	4,017
One party foreign, .	951	1,075	1,036	950	1,042	1,332	1,390	1,706
Not stated, . . .	299	267	167	267	133	163	62	220

Percentages of those stated.

Whole number, . .	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
American, . . .	58.83	58.86	58.58	63.93	62.10	60.53	59.87	59.72
Foreign, . . .	32.66	32.88	31.83	27.23	28.20	28.82	29.43	28.27
One party foreign, .	8.51	8.86	9.59	8.84	9.70	10.60	10.70	12.01

The purely American marriages have slightly declined; the purely foreign marriages have also slightly declined; and the mixed marriages have increased. We cannot regard these tables as very significant, since the number of persons of foreign extraction, although *born* in America, is known to be so large, and is

every year increasing. The children of Irish parents who came over in great numbers between 1830 and 1850, have now reached marriageable ages, and are recorded as Americans. The process of fusion of races in Massachusetts is becoming more complete with each generation, and the separation into American and foreign classes is attended with greater difficulty and an increased liability to error with each succeeding year. This is not to be regretted, but it makes tables like the preceding of less value than they would have possessed twenty years ago.

DEATHS.

This department of the registration reports is one of direct importance, since it measures, by comparison with the existing population, the condition of public health. Its indications are positive. If pestilence has visited us, here are the certain signs of its extent and its severity. If unusual mortality is found in certain districts, it can be immediately traced to certain diseases; and by careful investigation and comparison of all the circumstances accompanying them, (conditions not readily attained, but *attainable*,) we may reasonably hope to finally arrive at their exciting causes. The next step—to their *prevention*—will be a comparatively easy one. If length of days measures the health of communities, we know by this report how we stand in Massachusetts, and whether we are improving or retrograding. There is much which is gratifying and encouraging in the death report of 1866.

The following table will show how it stands in comparison with the six preceding years:—

DEATHS registered in Massachusetts.—*Numbers.*

	1866.	Average. 1860-5.	1865.	1864.	1863.	1862.	1861.	1860.
Deaths, .	23,637	25,312	26,152	28,723	27,751	22,092	24,085	23,068

The number of deaths (exclusive of stillborn children,) is thus seen to be 2,515 less than in 1865, and 1,675 less than the average of the past six years, and 5,086 less than in 1864, when the war was most destructive.

The death-rate for the year is as follows:—

Deaths to 100 persons living,	1.865
Persons living to one death,	53.6

DEATH-RATE during the past Six Years.

	1866.	1865.	1864.	1863.	1862.	1861.
Deaths to 100 living,	1.865	2.064	2.280	2.215	1.774	1.946
Living to one death,	54	48	44	45	56	51

In viewing the mortality of different parts of the State, it has, in previous years, been divided into geographical sections, having separate characteristics more marked than those which would be afforded by county lines.

In the table arranged on this plan, the following towns of Middlesex County are classed with Worcester County in the *Midland* Division:—Ashby, Townsend, Pepperell, Shirley, Groton, Dunstable, Tyngsborough, Westford, Littleton, Boxborough, Acton, Stow, Marlborough and Hopkinton. Chelsea, North Chelsea and Winthrop are classed with Essex County in the *North-Eastern* Division.

MORTALITY of Massachusetts in Six Geographical Divisions.—
1866.

DIVISIONS.	Population. 1865.	Deaths. 1866.	Deaths to 100 persons living.	Persons liv- ing to one death.
1. Metropolitan, (City of Boston,) .	192,318	4,377	2.27	44
2. North-Eastern, (Essex, and parts of Suffolk and Middlesex,) . }	379,495	7,362	1.94	52
3. South-Eastern, (Norfolk, Bristol, Plymouth, Barnstable, Dukes and Nantucket,) . . . }	312,366	5,196	1.66	60
4. Midland, (Worcester, and part of Middlesex,) . . . }	190,729	3,391	1.78	56
5. Valley, (Franklin, Hampshire and Hampden,) . . . }	135,179	2,393	1.77	56
6. Western, (Berkshire,) . . .	56,944	918	1.61	62

The rate of mortality in a community normally constituted, with an average proportion of persons of all ages, is a measure of

health and of the duration of life. It is therefore a matter of extreme interest to us in Massachusetts to know whether the conditions in which we live are comparatively healthful, and whether we live as long as other people. In England, a standard of normal mortality has been generally recognized to be seventeen in a thousand. This, of course, is but an approximation, and liable to change with succeeding generations. If the hopes of those who count upon an increased duration of life from sanitary reform are realized, it certainly will change; but at present, a mortality of not exceeding seventeen in a thousand is the point aimed at, and hardly ever reached. On referring to the English registration reports, it appears that no county in England has maintained this rate for a series of years. The nearest approach to it has been in Rutlandshire (1·85) and in Westmoreland (1·81.) In both these counties the rate has fallen for a single year below 1·70 per cent., or 17 in a thousand. The rate for all England is about 2·21. It appears from the preceding table, that while the death-rate for the State is, as we have previously seen, 1·86, the rate for the 3d, 4th, 5th and 6th divisions is below this point. Grouping these four divisions together, we find, with a population of 695,218, (55 per cent. of the whole State,) that their death-rate is 1·71. Such results must be regarded as highly satisfactory; and although future generations will doubtless surpass them, it is pleasant to know that the prospect of long life in Massachusetts is at least *as good to-day as that enjoyed by any civilized country.*

DEATHS by Counties.—1866.

COUNTIES.	Population. 1865.	Deaths to 100 living.	Persons living to one death.
Barnstable,	34,610	1.44	69
Berkshire,	56,944	1.61	62
Bristol,	69,395	1.80	55
Dukes,	4,200	1.52	66
Essex,	171,034	1.83	54
Franklin,	31,340	1.59	63
Hampden,	64,570	1.90	52
Hampshire,	89,269	1.69	59
Middlesex,	220,384	1.98	51
Nantucket,	4,748	1.89	53
Norfolk,	116,306	1.65	61
Plymouth,	63,107	1.62	62
Suffolk,	208,212	2.24	45
Worcester,	162,912	1.82	55
Whole State,	1,267,031	1.86	54

In order of healthfulness the counties rank as follows: Barnstable, Dukes, Franklin, Berkshire, Plymouth, Norfolk, Hampshire, Bristol, Worcester, Essex, Nantucket, Hampden, Middlesex, Suffolk.

The death-rate in the principal cities and towns stands as follows:—

Boston,	2.28	Newburyport,	1.39
Lowell,	2.42	Gloucester,	1.88
Worcester,	2.30	Haverhill,	1.70
Cambridge,	1.88	Dorchester,	1.60
Roxbury,	2.00	Pittsfield,	1.42
Charlestown,	2.22	Somerville,	2.42
Springfield,	1.75	Milford,	1.70
Lawrence,	2.36	Newton,	1.27
Salem,	1.95	Abington,	1.32
New Bedford,	1.62	Adams,	1.84
Lynn,	1.90	Fitchburg,	2.16
Fall River,	2.46	Weymouth,	1.63
Taunton,	1.70	Northampton,	2.09
Chelsea,	1.95		

Seasons. DEATHS by Quarters—Numbers and Percentages.

	Deaths in 1866.	Percentage.
Deaths registered in the Quarters ending with—		
March,	5,696	24.1
June,	5,260	22.3
September,	6,983	29.5
December,	5,698	24.1

The mortality in the several months was in the following order: August, September, July, March, October, January, November December, April, May, February, June.

Sex.—The return of peace is here again strikingly shown. The proportion of male deaths is greatly diminished. Thus,

In 1862, the proportions were 107 males to 100 females.					
1863,	“	“	109	“	100
1864,	“	“	109	“	100
1865,	“	“	100.5	“	100
1866,	“	“	97	“	100

DEATHS in Massachusetts for 1866—*Ages, Sex, Rates.*

	SEX.	Under 1 year.	Under 5 years.	20 to 30.	All others.	Totals.
Number of deaths, {	Males, .	2,581	4,196	1,204	6,201	11,601
	Females,	2,091	8,650	1,329	7,024	12,003
	Totals, .	4,672	7,846	2,533	13,225	23,604
Per cent. of deaths of each sex, . {	Males, .	22.25	36.17	10.38	53.45	100.
	Females,	17.42	30.41	11.07	58.52	100.
Per cent. for each sex of all deaths, {	Males, .	10.10	17.78	5.10	26.27	49.15
	Females,	8.86	15.46	5.63	29.76	50.85
	Totals, .	18.96	33.24	10.73	56.03	100.
Females to 100 males, 1866, . }	. .	81.	87.	110.4	113.2	103.5
Females to 100 males, 1865, . }	. .	86.4	91.2	107.9	103.6	99.5
Females to 100 males, 1864, . }	. .	85.6	88.7	78.8	96.3	91.7

The last table shows, by comparison with the two previous years, what an enormous difference in the mortality of the two sexes, above the age of infancy, was caused by the war, and how the relative mortality has been restored to the proportions which should exist in a state of peace. These changes are so great that the ten years table of rates of mortality of the sexes, which has usually been given in these Reports, is omitted. The periods of war and peace must each stand alone, and the deduction of averages in which both are included, can serve no useful purpose.

It will be seen that whereas in 1864, when the war was at its height, 100 men and 78 women died between the ages of 20 and 30; in 1866 the proportions were changed to 100 men and 110 women. The column including all other ages except those of infancy, shows a change hardly less striking.

The average age of all who died in 1866 was 30.92 years.

The average age of all who died in 1866 over 20 years of age was 52.08 years.

The following list includes all who died in Massachusetts in 1866, aged over 100 years:—

Aged over One Hundred Years—Died in 1866.

Date of Death.	N A M E.	Age.	Place of Death.	Birthplace.	Whether previously Married or Single.
Jan'y 18,	Joanna McCarty, . . .	102	Boston, . . .	Ireland, . . .	Married.
Febr'y 2,	Lucy Cooper, . . .	101	Nantucket, . . .	Africa, . . .	Married, (colored.)
March 9,	Eunice W. Forbes, . . .	103	Ashfield, . . .	Upton, Mass., . . .	Married.
May 16,	Mary English, . . .	104	Lawrence, . . .	Ireland, . . .	Married.
21,	Joanna Shehan, . . .	100	Tewksbury Almshouse, . . .	Ireland, . . .	Married.
July 5,	Elizabeth Phillips, . . .	102	Boston, . . .	Newburyport, Mass., . . .	Married, (colored.)
Nov. 16,	Case Brazee, . . .	101	Sheffield, . . .	Unknown, . . .	Married.
17,	Catherine Lynch, . . .	100	Springfield, . . .	Ireland, . . .	Married.
27,	Mary Maguire, . . .	101	Lowell, . . .	Ireland, . . .	Married.

Nativity and Parentage of Persons Deceased.—The value of these tables consists in the fact that through them, and by comparison with corresponding tables of births, we may gain some knowledge of the birth-rate, death-rate, and relative increase of the two great classes of which our population is composed,—the Puritan stock, which settled Massachusetts, and the foreign immigrants, who have come in during the present century. We pointed out in the Registration Report for 1865 the impossibility of attaining this information through the tables of nativity alone, since the deaths of all persons born in America were classed as deaths of Americans, without regard to the birth-place of their parents; and that the great mortality among the young children of foreign parents gave necessarily an entirely erroneous impression as to the mortality of the native and foreign classes. In order to correct this error a table has been made, from an analysis of the original reports from towns, giving the parentage in connection with all deaths. Both tables are printed,—that of *nativity* and that of *parentage*,—as each may help to explain the other.

NATIVITY of persons deceased during thirteen years, 1854–66.

	1854-9.	1860.	1861.	1862.	1863.	1864.	1865.	1866.
Whole No.,	20,996	23,068	24,085	22,974	27,751	28,723	26,152	23,637
American, .	16,880	19,404	20,039	19,190	23,265	24,031	21,528	18,499
Foreign, .	3,246	3,381	3,544	3,246	3,964	4,207	4,292	4,708
Not stated, .	870	233	502	538	522	485	332	430

Percentages of those stated.

American, .	83.88	85.16	84.97	85.53	85.45	85.10	83.38	79.71
Foreign, .	16.12	14.84	15.03	14.47	14.55	14.90	16.62	20.29

Parentage of all Deceased in 1866—Arranged by Counties, Sex and Age.

COUNTIES.	TOTALS.											
	Whole Number.	Sex.	Under 1.	1 to 5.	5 to 10.	10 to 20.	20 to 30.	30 to 40.	40 to 50.	50 to 60.	Over 70.	Not stated.
Totals,	23,637 11,601 12,003 33	Totals, . . Males, . . Females, . . Unknown, . .	4,699 2,581 2,091 27	3,178 1,615 1,559 4	950 479 471 -	1,491 667 824 -	2,533 1,204 1,329 -	2,112 954 1,158 -	1,670 824 846 -	1,643 859 784 -	3,292 1,403 1,889 -	134 68 64 2
Barnstable County,	497 274 219 4	Totals, . . Males, . . Females, . . Unknown, . .	65 38 24 3	57 32 25 -	20 12 8 -	50 29 21 -	50 31 19 -	50 26 24 -	28 16 12 -	25 10 15 -	101 50 51 -	5 2 2 1
Berkshire County,	918 478 442 3	Totals, . . Males, . . Females, . . Unknown, . .	159 99 57 3	110 62 48 -	50 25 25 -	71 31 40 -	86 38 48 -	66 30 36 -	58 30 28 -	64 34 30 -	150 61 89 -	8 6 2 -
Bristol County,	1,609 773 832 4	Totals, . . Males, . . Females, . . Unknown, . .	310 172 134 4	199 94 105 -	48 25 23 -	108 44 64 -	158 67 91 -	129 61 68 -	121 67 54 -	112 58 54 -	271 118 158 -	12 7 5 -
Dukes and Nantucket Counties,	154 87 67 -	Totals, . . Males, . . Females, . . Unknown, . .	12 6 6 -	5 3 2 -	8 3 5 -	8 8 - -	22 11 11 -	12 9 3 -	8 6 2 -	13 10 3 -	44 20 24 -	- - - -
Essex County,	3,136 1,450 1,682 4	Totals, . . Males, . . Females, . . Unknown, . .	670 375 292 3	435 219 215 1	138 59 79 -	197 71 126 -	345 144 201 -	243 96 147 -	199 92 107 -	191 96 95 -	442 165 277 -	18 6 12 -

Percentage of all Deceased in 1866—Arranged by Counties, Sex and Age.

●● to 70	Over 70	Not stated.
521	549	29
258	290	16
263	330	13
-	-	-
-	9	1
-	1	1
-	1	1
-	-	-
10	14	2
6	4	2
4	10	1
-	-	-
34	23	3
15	7	1
19	16	2
-	-	-
2	2	1
1	2	1
1	-	1
-	-	-
55	51	6
26	18	2
29	33	4
-	-	-

Franklin County,	{	07 26 03 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	10 8 2 -	30 8 12 -	0 1 5 -	5 3 2 -	8 3 5 -	6 4 2 -	4 4 - -	18 9 0 -	25 11 14 -	4 2 2 -	4 2 2 -	1 1 1 -
Hampden County,	{	457 211 246 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	109 49 60 -	104 44 60 -	20 10 10 -	31 12 19 -	51 28 23 -	47 21 26 -	18 9 0 -	23 12 11 -	25 11 14 -	29 15 14 -	23 12 11 -	-
Hampshire County,	{	165 76 89 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	33 22 11 -	20 8 12 -	7 4 3 -	10 6 4 -	21 8 13 -	27 11 16 -	15 6 9 -	13 7 6 -	13 7 6 -	16 4 12 -	9 2 2 -	1 1 1 -
Middlesex County,	{	1,836 925 911 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	266 198 168 -	340 176 164 -	75 35 40 -	113 51 62 -	197 99 98 -	210 96 114 -	136 64 72 -	110 63 47 -	110 63 47 -	181 73 53 -	155 68 87 -	3 2 1 -
Norfolk County,	{	765 386 377 2	Totals, . . . Males, . . . Females, . . . Unknown, . .	192 93 97 2	115 54 61 -	45 25 20 -	49 25 24 -	67 39 28 -	88 47 41 -	72 38 34 -	47 27 20 -	47 27 20 -	89 17 22 -	41 15 26 -	10 6 4 -
Plymouth County,	{	181 101 80 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	28 12 16 -	20 12 8 -	9 6 3 -	11 6 5 -	19 13 6 -	27 16 11 -	19 15 4 -	20 10 10 -	20 10 10 -	5 3 2 -	23 8 15 -	-
Suffolk County,	{	2,807 1,423 1,374 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	639 336 303 -	465 241 224 -	122 65 57 -	172 87 85 -	260 191 169 -	296 138 158 -	258 135 123 -	204 114 90 -	204 114 90 -	143 64 79 -	147 61 86 -	1 1 1 -
Worcester County,	{	1,163 585 578 -	Totals, . . . Males, . . . Females, . . . Unknown, . .	296 165 131 -	256 129 127 -	69 24 25 -	95 38 57 -	106 57 49 -	100 45 55 -	68 31 37 -	55 28 27 -	55 28 27 -	53 22 21 -	62 24 38 -	3 2 1 -

In examining the last table, we are met at the outset by serious difficulties. The number whose parentage is *not stated* (3,460) is more than 14 per cent. of the whole. This defect is partly, no doubt, the fault of the recording town officers, who may have supposed that, as the information thus required had never been analyzed, it did not demand the same care as other parts of the record. It may also proceed from a real difficulty in obtaining the facts, as the friends of the deceased may not know, or be able to ascertain, the parentage. We must take the record as it stands, and do the best we can with it, hoping that in future years it may be more complete.

But this is by no means the only difficulty in drawing conclusions from this table. It might at first appear that a comparison of the foreign births and deaths with the numbers of the foreign population as reported by the census would give the comparative increase of the two classes. But the birth and death reports fix the nationality by the birth-place of the parents, while the census fixes the nationality by the birth-place of those who were enumerated. The census takes the birth-place of the existing population; the birth and death reports go back one generation.

The children of Irish or German parents born on our soil are, in the census, called American, while in the birth and death reports they are called foreign. In point of fact, we have no certain means of knowing how many of the 1,267,031 people in Massachusetts are American or foreign in the sense of the birth and death reports. We can, however, compare the birth and death reports with each other, and from them gain some interesting results.

By dividing the "not stated" equally between the two classes we obtain the following result:—(See birth report, page 26.)

	Births.	Deaths.	Natural Increase. Numbers.
American parentage,	16,555	12,196	4,359
Foreign parentage,	17,530	11,441	6,089

There are two sources of error, however, in this statement, and which we have no means of correcting. One is that to which we

have referred,—the great number in the death reports whose parentage is unknown. The other is the greater age of the American class. How great this latter difference is will be seen by the following table:—

DEATHS at the Extremes of Life, “not stated” equally divided.

	Under 5 years of age.	Over 60 years of age.
American,	3,368	3,521
Foreign,	4,514	1,706

Or, omitting the “not stated.”

American,	2,998	2,910
Foreign,	4,149	1,094

From the two tables may be also deduced the following figures, which, placed in direct contrast, show how entirely inadequate to express the fact is the table of nativity taken by itself:—

	Deaths by Nativity Table.	Deaths by Parentage Table.
American, all ages,	18,499	10,074
Foreign, “	4,708	9,319
Half Foreign, all ages,	—	784
Not stated, “	430	8,460

We see that instead of the American mortality being four times as great as the foreign, as would appear from the nativity table, the two classes stand very nearly together (in so far as parentage is stated,) in their death record, notwithstanding the difference in the numbers of the living, and the greatly superior age of the Americans.

How many American-born children of foreign parents are included in our population? This class must be nearly all under 35 years of age, since foreign immigration in any considerable numbers commenced about 1830.

The number of this class who died in 1866 may be approximated thus: Putting all the "not stated" (or those of doubtful nativity) with the Americans, and equally dividing the half foreign class, the difference between the American and foreign deaths in the two tables stands as follows. The parentage table shows the number of Americans to be 5,003 less, and the number of foreigners to be 5,003 more, than the nativity table. Consequently we may say that *at least* 5,003 of the native-born children of foreign parents died. How many more should be added from the thousands whose parentage is not given, it is impossible to say, but in round numbers 5,000 such deaths are proved.

The whole number of persons in Massachusetts under thirty years of age,* by the census of 1865, was 746,702.

The whole number dying in Massachusetts under 30 years of age in 1866, was 12,851, or 17 in a thousand.

The whole number of native-born children of foreign parents dying in Massachusetts in 1866, was *at least* 5,000, and probably very many more.

These are the only elements available for computing the numbers of the class in question, and they are insufficient to give the desired information. It is not a population of all ages, but all or nearly all are under middle life. The adults have, perhaps, an average chance of life, but certainly the children have not. They live for the most part in crowded towns, and under most unwholesome conditions. Wherever the sanitary conditions are most unfavorable to life, there do these children most abound.

We have seen that the mortality of all classes under thirty years of age was 12,851; and that the mortality among the native-born of foreign parents, supposing them to be all under 30, (and very few can be over that age,) was *at least* 5,000, or 39 per cent. of the whole. It is quite evident the percentage was higher than this, but it cannot be demonstrated. Add to this the mortality of *foreign-born* and we see that the actual number of deaths under thirty years of age must be greater among the foreign than among the native class.

* There are no means of ascertaining the number under 35 years of age.

From the facts above stated the reader must form his own opinion as to the relative strength of the two classes in our population, but we think no one can estimate the numbers of those who were either born in Europe, or are of European parentage, at less than one-third of the whole. Without knowing positively their numbers, no birth-rates or death-rates can be determined. To make them on suppositions would be to put vital statistics to unworthy use.

That both the birth-rate and death-rate of the foreign class is very much higher than the birth-rate and death-rate of the American class is evident. Beyond that point we see no way to draw conclusions with certainty of their correctness.

Every year the difficulty of making lines of division between the (so called) American and foreign classes becomes greater as these classes become more and more mingled and assimilated. If we could imagine both immigration and emigration to cease for two or three generations, (and this is but a trifling period in the lifetime of a nation,) the statist who should then attempt to identify classes derived from the Puritan immigrants of the 17th century, and the Irish and German and British American immigrants of the 19th century, would find it as impossible as it would be found to-day to distinguish the descendants of Saxons, Normans and Danes in the common people of England.

Mortality of Infants in State Almshouses.—There is a very general belief that the unfortunate infants who are either born in the State almshouses or are brought there from any cause, die in unusual numbers. In order to ascertain the facts, which are not completely evident from the registration returns, or from any publications prepared for the legislature, application was made to the superintendents of the almshouses, who furnished for this Report the figures given in the following table:—

**CHILDREN under one year of age in the State Almshouses in 1866,
and what became of them.**

	Bridgewater Almshouse.	Monson Almshouse.	Tewksbury Almshouse.
Existing in Almshouse January 1, 1866, .	87	11	37
Born in the house or received during the year,	52	56	201
Totals to be accounted for, . .	89	67	238
Died,	21	22	80
Removed or discharged,	41	21	109
Remaining in Almshouse Dec. 31, 1866, .	27	24	49
Totals accounted for,	89	67	238

The number of nursing children dying in these three almshouses during the year is seen to be, by report of the superintendents, 123 (or according to registration returns 131,) out of a total of 894. This is at the rate of 32 in a hundred, and is certainly not a large percentage from a class of children many of whom are born of diseased parents, and a very large number disowned, deserted, and left alone to the tender mercies of the State. That so few die is very creditable to the superintendents and physicians into whose charge they are committed.

CAUSES OF DEATH.

The weather during 1866, as indicated by temperature and rain-fall, was thus recorded at Amherst and Williams Colleges:—

MEAN TEMPERATURE of the air, and amount of rain-fall for each month of 1866.

	AMHERST.		WILLIAMSTOWN.	
	Mean Temperature.	Rain-Fall.	Mean Temperature.	Rain-Fall.
January,	21·93	1·86	19·26	1·01
February,	26·18	4·62	24·85	1·78
March,	31·64	8·16	29·42	1·76
April,	48·63	2·03	46·20	0·75
May,	54·63	4·48	52·33	3·38
June,	65·82	5·66	61·80	4·81
July,	72·91	4·02	69·26	3·70
August,	63·48	3·95	61·41	3·37
September,	60·00	4·71	58·50	4·97
October,	49·50	3·38	45·73	2·37
November,	40·10	3·86	40·20	4·00
December,	26·80	3·57	28·70	3·74
Mean temperature for year, . .	46·76	—	44·39	—
Total rain-fall,	—	44·80	—	35·14

In considering the causes of death, we find, from year to year, a broad distinction separating the class known as zymotic diseases from all others. Constitutional and local diseases are always with us, and each year we may expect to find a certain number of

victims, not differing greatly in numbers, or percentages to the whole population, from its immediate predecessor. Changes in the rate of mortality from these causes are perceived only by comparison of a series of years. With the zymotic class, however, and particularly in the sub-division known as miasmatic, we find included all the *epidemics*,—diseases which prevail, as the name signifies, “upon or among the people.” The immediate influences which propagate and make active these terrible destroyers of life are yet to be discovered. We only know that they are certain forms of fever, attacking large numbers simultaneously; often suddenly leaving a locality and establishing themselves in another which had been previously exempt; each epidemic seeming to have, in each place which it visits, a period of increase and decline, and differing greatly in successive seasons. The mystery which has always concealed the intimate nature of these diseases from the knowledge of man is almost as impenetrable as ever, yet in these latter days a practical observation has been made which seems to bear the test of experience. It is this: that the virulence and destructiveness of this class of diseases is in proportion to the neglect of those provisions which insure to a community *cleanliness* in the broadest sense of that term. An overcrowded population, breathing foul air, will suffer from epidemic diseases in a measure proportioned, in some degree, to the unclean manner in which they live. It is therefore reasonable to suppose that a condition of sound health has more or less power to resist the introduction of these influences, whatever they may be, and of enabling the body which has received them to support the disturbance which they occasion better than a condition of depressed, or feeble, or imperfect health. It also appears that putrefying organic materials, with which the air in crowded and ill-ventilated localities is always charged, have a property of intensifying and making more virulent the epidemic poison, which may be then conveyed in its more active form to other neighboring localities which may be neither crowded nor ill-ventilated.

It is from such considerations that the destructiveness of the zymotic class of diseases is watched all over the civilized world, as an indication, however imperfect, of the real progress which is being made in promoting the public health. The record of Massachusetts in 1866 is in this respect of a gratifying character.

The following table will show how it compares with the two preceding years:—

YEARS.	Dysentery.	Typhus.	Whooping Cough.	Croup.	Diphtheria.	Measles.	Scarlatina.
1864, . .	1,186	1,844	235	768	1,231	320	1,508
1865, . .	1,548	1,694	863	504	672	136	807
1866, . .	949	1,091	287	481	899	109	385

The number of deaths by zymotic diseases was 5,861, which was less than in any year since 1859, and 2,358 less than in 1865. The percentage of deaths by zymotic diseases was only 24·31. In 1865 it was 31·20, and the average for 25 years and 8 months was 28·85.

The percentage of constitutional diseases, including consumption, was 26·64; of local diseases, 26·84; and of developmental diseases, 18·16. All these are relatively a little higher, it is to be observed, from the marked reduction in the percentage of zymotic diseases.

Eighty-six males and eight females lost their lives by railroad accidents; fifty-seven males and sixteen females killed themselves; five males and three females were killed by lightning; twenty-one were lost at sea; one man is reported as murdered; five males and three females were frozen to death; fifty males and forty-five females were burnt to death; thirteen males and eleven females are reported poisoned; one hundred and seventy-one males and thirty females are reported drowned.

The mortality from the ten most destructive diseases in the past six years, with the annual average for the whole period, is given in the following table:—

Order of Succession of Ten Principal Diseases, 1861-6.

1861.	1862.	1863.	1864.	1865.	1866.	Average. 1861-66.
Consumption, Infantile, Pneumonia, Cholera Infantum, Old Age, Typhus, Scarlatina, Brain Disease, Heart Disease, Diphtheria.	Consumption, Scarlatina, Infantile, Pneumonia, Old Age, Typhus, Cholera Infantum, Brain Disease, Heart Disease, Diphtheria.	Consumption, Pneumonia, Typhus, Diphtheria, Scarlatina, Old Age, Infantile, Cholera Infantum, Dysentery, Croup.	Consumption, Pneumonia, Scarlatina, Old Age, Typhus, Infantile, Diphtheria, Cholera Infantum, Dysentery, Apoplexy and Paralysis.	Consumption, Typhus, Dysentery, Pneumonia, Old Age, Infantile, Cholera Infantum, Heart Disease, Scarlatina, Diphtheria.	Consumption, Pneumonia, Infantile, Old Age, Typhus, Cholera Infantum, Dysentery, Heart Disease, Apoplexy and Paralysis, Croup.	Consumption, . . . 4,575 Pneumonia, . . . 1,514 Infantile, . . . 1,323 Old Age, . . . 1,296 Typhus, . . . 1,283 Cholera Infantum, . . . 1,126 Scarlatina, . . . 1,082 Dysentery, . . . 975 Diphtheria, . . . 838 Heart Disease, . . . 782

The preceding table shows the order of fatality of ten principal diseases as they are classed in the nosological table furnished to the towns. This no doubt is as good and useful a division of diseases as can well be made, yet in a certain view it fails to express all we may wish to know. Thus it appears that if a certain group of diseases, some members of which may be readily mistaken for others and so reported, and all having a certain kinship, be brought together, the result is quite different. Putting together in this way apoplexy and paralysis, (4,366,) insanity, (484,) cephalitis, (3,502,) and brain diseases, (1,693,) we find the aggregate in six years to be 9,995, making the annual average 1,666, or even more than pneumonia. This group, which seems almost as well entitled to stand by itself as consumption, would then rank next to that disease in fatality. This fact seems important to be noted, since it furnishes proof, if any were wanting, that we are a brain-working people in Massachusetts, and that not infrequently this overworked organ shows the effect of the strain which it is made to bear.

Totals, .	300	940	1,001	100	885	142	481	1,078	220	4,000	1,689
Under 5, .	199	500	104	88	265	80	370	1,078	220	282	612
5 to 10, .	108	76	84	18	82	9	48	-	-	55	51
10 to 15, .	89	80	102	8	22	1	5	-	-	95	18
15 to 20, .	18	22	154	8	5	2	2	-	-	382	88
20 to 30, .	17	84	208	4	3	7	1	-	-	1,242	105
30 to 40, .	11	40	117	-	2	15	-	-	-	844	109
40 to 50, .	4	41	81	1	2	10	1	-	-	577	113
50 to 60, .	5	54	73	-	-	23	-	-	-	435	152
60 to 70, .	1	63	84	1	1	14	-	-	-	393	198
70 to 80, .	2	53	58	1	-	21	-	-	-	227	161
Over 80, .	-	31	20	-	-	9	-	-	-	47	78
Unknown,	-	5	6	-	3	1	-	-	-	21	4

The PERCENTAGE of Deaths from several Specified Causes, of each Sex, in each Month, and at different Specified Periods of Life, which were registered during the year 1866.

		Diphtheria.	Dysentery.	Typhus.	Measles.	Scarlatina.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consumption.	Pneumonia.
SEX.	Totals, .	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Males, .	43.36	51.00	47.94	49.54	48.05	52.82	48.03	53.25	47.27	46.17	51.13
	Females, .	56.64	48.68	51.97	50.46	51.95	47.18	51.97	46.38	52.73	53.83	48.87
	Not Stated, .	-	8.32	.09	-	-	-	-	.37	-	-	-
MONTHS.	January, .	12.53	.53	8.98	5.50	15.58	10.56	13.69	.28	5.91	8.11	11.29
	February, .	11.28	1.68	7.52	6.42	16.10	11.27	11.83	.37	5.91	7.37	13.06
	March, .	9.52	1.58	6.51	11.01	14.55	6.34	10.67	.74	6.36	9.57	14.15
	April, .	7.77	.95	5.32	11.01	11.17	6.34	8.12	.84	2.28	8.65	8.91
	May, .	6.51	1.48	6.05	10.09	7.53	9.15	9.28	1.76	5.00	9.67	9.52
	June, .	5.01	2.74	4.40	14.68	5.98	5.63	5.80	1.95	4.09	8.39	6.04
	July, .	4.01	14.65	5.13	12.85	7.27	6.34	4.41	25.42	14.09	8.07	3.48
	August, .	6.77	35.83	11.18	12.85	2.86	5.63	4.41	35.53	17.73	7.98	3.29
	September, .	7.52	.23.92	11.82	4.59	1.82	6.34	4.41	22.91	18.18	7.39	3.42
	October, .	10.03	10.85	13.38	2.75	4.16	12.68	6.96	7.89	10.91	7.85	5.61
	November, .	10.03	4.11	10.91	1.83	5.19	8.45	10.21	1.48	5.00	8.65	10.43
	December, .	9.02	1.58	8.80	6.42	7.79	11.27	10.21	.83	4.54	8.24	10.80
	Unknown, .	-	.10	-	-	-	-	-	-	-	.06	-

SUMMARY OBSERVATIONS.

[illegible]

The NUMBER of Deaths from several Specified Causes, of each Sex, in each Month, and at different Specified Periods of Life, which were registered during the Twelve Years, 1855-66.

		Diphtheria.	Dysentery.	Typhus.	Measles.	Scarlatina.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consumption.	Pneumonia.
{ SEX }	Totals,	5,336	10,431	13,533	2,318	13,077	1,906	6,690	11,321	3,834	55,363	15,729
	Males,	2,505	5,276	7,177	1,207	6,488	987	3,494	5,991	2,085	24,660	8,311
	Females,	2,825	5,124	6,342	1,110	6,577	917	3,182	5,301	1,795	30,678	7,402
	Not stated,	6	81	14	1	12	2	14	29	4	25	16
{ MONTHS }	January,	499	97	902	169	1,576	175	746	50	198	4,616	1,809
	February,	446	99	716	167	1,879	182	668	52	189	4,428	1,808
	March,	435	102	817	246	1,417	198	680	54	195	4,945	2,163
	April,	380	125	774	253	1,310	204	575	86	195	4,893	1,751
	May,	340	137	675	264	1,155	185	486	98	202	4,897	1,419
	June,	348	218	647	283	1,034	151	365	191	174	4,306	962
	July,	356	1,126	804	244	858	128	273	1,763	385	4,233	619
	August,	345	3,298	1,321	234	709	114	288	4,417	645	4,635	546
	September,	450	3,201	1,826	116	629	126	381	3,248	768	4,873	660
	October,	574	1,546	2,163	102	756	124	610	1,098	433	4,616	1,016
	November,	563	336	1,655	109	932	148	796	183	225	4,382	1,295
	December,	595	134	1,213	127	1,316	168	820	73	223	4,486	1,669
	Unknown,	5	12	20	4	6	3	2	8	2	53	10

SUMMARY OBSERVATIONS.

[illegible]

*** Diphtheria returned for nine years only.**

The PERCENTAGE of Deaths from several Specified Causes, of each Sex, in each Month, and at different Specified Periods of Life, which were registered during the Twelve Years, 1855-66.

		Diphtheria.	Dysentery.	Typhus,	Measles.	Scarlatina.	Erysipelas.	Croup.	Cholera Infantum.	Teething.	Consumption.	Pneumonia.
SEX.	Totals, .	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
	Males, .	46.95	50.58	53.03	52.07	49.61	51.78	52.23	52.92	53.08	44.54	52.84
	Females, .	52.94	49.12	46.86	47.89	50.30	48.11	47.56	46.82	46.82	55.41	47.06
	Not stated, .	.11	.80	.11	.04	.09	.11	.21	.26	.10	.05	.10
MONTHS.	January, .	9.35	.93	6.67	7.29	12.05	9.18	11.15	.44	5.16	8.34	11.50
	February, .	8.36	.95	5.29	7.20	10.55	9.55	9.98	.46	4.93	8.00	11.50
	March, .	8.15	.98	6.04	10.61	10.84	10.39	10.16	.48	5.09	8.93	13.75
	April, .	7.12	1.20	5.72	10.91	10.02	10.70	8.59	.76	5.09	8.84	11.13
	May, .	6.37	1.32	4.99	11.39	8.83	9.71	7.27	.87	5.27	8.35	9.02
	June, .	6.52	2.10	4.78	12.21	7.91	7.92	5.46	1.69	4.54	7.78	6.12
	July, .	6.67	10.79	5.94	10.53	6.56	6.72	4.08	15.57	10.04	7.65	3.94
	August, .	6.47	31.61	9.76	10.09	5.42	5.98	4.30	39.01	16.82	8.37	3.47
	September, .	8.44	30.69	13.49	5.01	4.81	6.61	5.70	28.69	20.03	8.80	4.19
	October, .	10.76	14.82	15.98	4.40	5.78	6.51	9.12	9.70	11.29	8.34	6.48
	November, .	10.55	3.22	12.23	4.71	7.13	7.76	11.90	1.62	5.87	7.91	8.23
	December, .	11.15	1.28	8.96	5.48	10.06	8.81	12.26	.64	5.82	8.10	10.61
	Unknown, .	.09	.11	.15	.17	.04	.16	.03	.07	.05	.09	.06

Totals,	.	.	.	.	.	.	.	.	.	.	.	.	.
Under 5,	.	.	.	.	.	.	.	.	.	.	.	.	.
5 to 10,	.	.	.	.	.	.	.	.	.	.	.	.	.
10 to 15,	.	.	.	.	.	.	.	.	.	.	.	.	.
15 to 20,	.	.	.	.	.	.	.	.	.	.	.	.	.
20 to 30,	.	.	.	.	.	.	.	.	.	.	.	.	.
30 to 40,	.	.	.	.	.	.	.	.	.	.	.	.	.
40 to 50,	.	.	.	.	.	.	.	.	.	.	.	.	.
50 to 60,	.	.	.	.	.	.	.	.	.	.	.	.	.
60 to 70,	.	.	.	.	.	.	.	.	.	.	.	.	.
70 to 80,	.	.	.	.	.	.	.	.	.	.	.	.	.
Over 80,	.	.	.	.	.	.	.	.	.	.	.	.	.
Unknown,	.	.	.	.	.	.	.	.	.	.	.	.	.

* Diphtheria returned for nine years only.

Diphtheria.—This frightful disease, unknown or unrecognized among us until within about ten years, began to be reported among the causes of death in 1858. It increased rapidly from 18 deaths in that year, to 1,420 deaths in 1863. Since then the decline has been almost equally rapid,—1,231 in 1864, 672 in 1865, and 399 in 1866. The distinction between this disease and croup has always been obscure, and cases of both diseases may be reported under either heading; but the number of deaths from croup has not been correspondingly either decreased or diminished, and it is therefore certain that diphtheria has become very much less fatal, and probably very much less frequent, than three years ago. More than half the cases in 1866 occurred in the counties of Essex, Middlesex, Suffolk and Worcester. The greatest number of cases occurred in January, (50,) and the smallest number in July, (16;) 199 cases were in children under five, and 103 cases in children between five and ten years of age, leaving only 97 above those ages.

Dysentery was much less fatal than usual. Deaths from this cause are divided nearly equally between the sexes. As usual it prevailed during the summer and autumn,—139 cases in July, 340 in August, 225 in September, 103 in October, and 142 in all the other months. Four hundred and ninety-seven, or more than half the decedents, were under five years of age. Essex, (148,) Middlesex, (146,) Suffolk, (140,) and Worcester, (160,) show the largest number of cases. The mortality from dysentery was less than in any year since 1862, and less than the average annual number during the past quarter of a century.

Typhus as well as dysentery was unusually fatal in 1865, but in 1866 the falling off in the death returns of both diseases was equally striking. In place of 1,694 deaths by typhus in 1865, we have only 1,091 in 1866,—523 males and 567 females and one, sex not stated. The largest number of deaths was in October, (146,) and the smallest number in June, (48.) The difference between these two seasons is less than usual, and shows that the disease did not prevail, as it often does in the autumn, as a virulent epidemic. The greatest mortality was, as usual, between the ages of twenty and thirty, but no period of life was exempt. The

distribution of typhus among the counties was not remarkable in 1866.

Measles.—Only 109 fatal cases were reported, equally divided between the sexes. No month was exempt. Eighty-three cases were under five years of age. Seventy of the 109 deaths were in Essex, Middlesex and Suffolk Counties.

Scarlatina visited us very lightly in 1866. Only 385 deaths,—185 males and 200 females,—were reported from this disease, which sometimes claims four times that number.

The percentage to deaths from all specified causes was but 1·58, instead of more than 5 per cent. in 1862, 1863 and 1864, and 3·06 per cent. in 1865. All the counties report cases, but in none did the disease prevail extensively. All but 16 of the cases were under fifteen years of age, and 265 cases were under five. Cases are reported in every month.

Erysipelas.—Under this head are also included seven cases of phlebitis. Seventy-eight males and 69 females are reported. These cases occurred in all the months of the year and at all ages. The number is rather below the average.

Croup.—Two hundred and seven males and 224 females died from this disease. This number is 1·79 per cent. of all deaths from specified causes, which is 0·55 less than the average for the past quarter of a century. It is probable that the treatment of this much dreaded disease is better understood, and that some lives have thereby been saved. Deaths are recorded in every month of the year, the largest number (59) being in January, and the smallest number (19) being in each of the months July, August and September. Three hundred and seventy-nine were under five years of age, 43 between five and ten, and 9 at other ages which should probably have been credited to some other disease. All the counties furnished cases, and in numbers not calling for special remark.

Cholera Infantum caused the death of 576 male and 502 female children, and although cases are reported in each month,

900 occurred in July, August and September. The largest number was in Suffolk County, (273,) next in Middlesex, (231,) and Essex, (164,) while Franklin, Hampshire and Berkshire together report only 53. It is a fatal disease in the counties having a crowded population, while the counties not containing large cities and towns suffer much less. The percentage of all specified deaths in the State at large was 4·47 in 1866, or a little above the average.

Teething.—This very indefinite cause of death is recorded in 220 cases, which is 0·39 of one per cent. less than the average.

Consumption caused the death of 4,600 persons,—2,124 males and 2,476 females; 46·17 per cent. of males and 53·88 per cent. of females.

Although the whole number of deaths is 61 less than in 1865, the percentage to deaths from all causes is 19·08 in 1866, in place of 17·69 in 1865, owing to the greatly diminished number of deaths from zymotic diseases. It is still, however, 1·53 per cent. less than the average percentage for a quarter of a century. The aggregate number is absolutely less than in either of the three preceding years. The mortality in the

First quarter	was	1,153	or	25·06	per cent.	of the whole.
Second	“	“	1,229	or	26·72	“ “ “
Third	“	“	1,079	or	23·46	“ “ “
Fourth	“	“	1,139	or	24·76	“ “ “

Or, divided by seasons, the deaths were, in

Spring,	1,283	or	27·89	per cent.	of the whole.
Summer,	1,125	or	24·46	“	“ “
Autumn,	1,100	or	23·91	“	“ “
Winter,	1,092	or	23·74	“	“ “

DEATHS from Consumption in the Counties, 1866.—*Percentages.*

COUNTIES,	Population, 1865.	Percentage to Deaths from all Specified Causes.	Persons liv- ing to one Death.
Barnstable, . . . ✓	34,610	21.03	320
Berkshire,	56,944	16.31	387
Bristol,	89,395	18.69	292
Dukes and Nantucket,	8,948	19.11	298
Essex,	171,034	20.70	260
Franklin,	31,840	18.69	333
Hampden,	64,570	18.01	299
Hampshire,	39,269	17.37	341
Middlesex,	220,384	18.97	264
Norfolk,	116,306	18.97	313
Plymouth,	68,107	24.63	249
Suffolk,	208,212	18.14	230
Worcester,	162,912	18.79	289

The geographical distribution of consumption was the subject of somewhat extended remarks in the report of 1865, based upon a table showing the mortality from this cause in every town in Massachusetts for ten years. It was found that the disease is very unequally distributed throughout the State. The cause of this unequal distribution was not, however, apparent. In so far as it was possible for a single observer to be acquainted with the conditions of those towns and the different parts of those towns, there was no cause which could be assigned with certainty as a controlling one in the development or the progress of the disease. It is not surprising that this should be the case, but we cannot help believing that a careful comparison and classification of groups of towns in the same vicinity, such as can be made by physicians who are familiar with all the influences bearing upon the health of the inhabitants, will finally lead to important results.

The facts are on record for all who are interested in the subject to compare and apply them.

It is well known to most of our readers, that during the past ten years Dr. H. I. Bowditch, of Boston, has expressed the opinion, based upon very extensive observation, that *soil-moisture* is chief among the causes of consumption in New England, and that localities quite near to each other, and even in the same town and neighborhood, may, chiefly from this cause, be possessed of influences upon this disease quite opposed to each other. These views were expressed by Dr. Bowditch in the annual address delivered before the Massachusetts Medical Society in 1862, and published in their Transactions. A letter recently received from a gentleman travelling in Europe in search of health for a member of his family, gives the impression that the French physicians are aware of some such influences as those described by Dr. Bowditch. He says: "I observe that the resident physicians in the European winter-stations are very apt to proscribe large portions or quarters of their towns. Our doctor here, said we might as well not come to Pau, unless we lived in a certain indicated part of the town. It seems to me that the usages and opinions which prevail in these invalid-stations, confirm the theory that the good and bad places for lung-disease lie close beside each other, distinguished by local conditions of very narrow scope."

A confirmation of Dr. Bowditch's leading idea, and one of a very authoritative character, has recently appeared in the "Ninth Report of the (English) Medical Officer of the Privy Council." It appears that inquiries were ordered in England in 1865 and 1866 into the "effect of drainage works and other sanitary regulations designed to promote the public health." In pursuance of this inquiry, twenty-four towns were selected in which structural sanitary works had been most thoroughly done, and had been longest in operation. These towns were of various sizes,—from 3,000 or 4,000 to 160,000 inhabitants. Tested by mortality records, which were analyzed with the utmost care, it was found by comparison with an equal period of time preceding the sanitary works, that very notable changes in the death-rate from phthisis had taken place since the improvements had been made.

In commenting upon this result, Mr. John Simon, Medical Officer of the Privy Council, says: "These facts appear to indicate a partial dependence of pulmonary phthisis on some of the

unwholesome conditions which have been removed. And when a detailed examination is made of the cases which give that indication, and they are compared with the different class where phthisis has not lessened its amount, the novel and most important conclusion suggests itself, that *the drying of soil which has, in most cases, accompanied the laying of main sewers in the improved towns, has led to the diminution, more or less considerable, of phthisis.*

"The facts which are yet in evidence, seem most strongly to support this conclusion, which, should it be substantiated, will constitute a very valuable discovery, evolved by Dr. Buchanan from the inquiries here reported on.

"In the adjoining table, or in the table which Dr. Buchanan particularly gives to this matter, it will be seen that the reduction of phthisis, where certain works have been executed, is far too large and far too general to be regarded as an accidental coincidence."

The table referred to is here given. In comparing the phthisical death-rate in the first column with the change reported in the second column, the diminution or increase is given by percentages of the previous rate. Thus, in the case of Salisbury, the former rate was $44\frac{1}{8}$ per 10,000 living; the present rate $22\frac{3}{8}$, or 49 per cent. of the former rate.

The phthisical death-rate in Massachusetts in 1866 was 36 per 10,000 living.

TOWNS.	Previous phthisis death-rate, (all ages.) per 10,000 annually.	DEGREE OF CHANGE IN PHTHISIS DEATH-RATE.		Influence of Sewerage works on Sub-soil.
		In Totals.	In Females. 15-55.	
Salisbury, . .	44½	—49 per ct.,	?	Much drying.
Ely,	32	—47 “	?	“ “
Rugby, . . .	28½	—43 “	—48 per ct.,	Some “
Banbury, . .	26½	—41 “	—36 “	Much “
Worthing, . .	30½	—36 “	—41 “	Some “
Macclesfield, .	51½	—31 “	—22 “	Much “
Leicester, . .	43½	—32 “	—16 “	Drying.
Newport, . .	37	—32 “	—13 “	Local drying.
Cheltenham, .	28½	—26 “	—25 “	Some “
Bristol, . . .	33½	—22 “	—18 “	Some “
Dover, . . .	26½	—20 “	—18 “	Local “
Warwick, . .	40	—19 “	—10 “	Some “
Croydon, . .	*	—17 “	?	Much “
Cardiff, . . .	34½	—17 “	?	“ “
Merthyr, . . .	38½	—11 “	—12 “	Some recent drying.
Stratford, . .	26½	— 1 “	— 4 “	Some local “
Penzance, . .	30½	— 5 “	0 “	No change.
Brynmawr, . .	26½	+ 6 “	— 8 “	No notable change.
Morpeth, . .	30½	— 8 “	+12 “	No change.
Chelmsford, . .	32½	0 “	+11 “	Slight drying.
Penrith, . . .	39½	— 5 “	+27 “	No change.
Ashby, . . .	25½	+19 “	—10 “	Some drying.
Carlisle, . . .	32	+10 “	+11 “	Drying, with local defects.
Alnwick, . .	28½	+20 “	+36 “	No drying.

* Phthisis and lung diseases together, previously 59½. Reduction of this rate is what is above given.

It will be observed that Mr. Simon speaks of this apparent connection of phthisis with soil moisture as “a very valuable discovery by Dr. Buchanan,” and in another place as “a novel and most important conclusion.” We are therefore bound to suppose that Mr. Simon had never seen or heard of the address to the Massachusetts Medical Society, published in 1862, and that he had not read the Massachusetts Registration Reports of either 1861 or 1865, in both of which reference is made to the observations of Dr. Bowditch.

Pneumonia.—Eight hundred and thirty-eight males and 801 females died from this disease in 1866. This is 146 more than in 1865. The percentage to all deaths from specified causes is also 1.13 per cent. higher, chiefly from the marked diminution in the deaths from zymotic diseases before referred to.

DEATHS from Pneumonia in the Counties, 1866.—*Percentages.*

COUNTIES.	Percentages to deaths from all specified causes.	COUNTIES.	Percentages to deaths from all specified causes.
Barnstable,	2.9	Hampshire,	8.7
Berkshire,	8.2	Middlesex,	8.1
Bristol,	6.5	Norfolk,	6.6
Dukes and Nantucket, .	0.6	Plymouth,	3.8
Essex,	5.5	Suffolk,	7.1
Franklin,	5.9	Worcester,	7.9
Hampden,	5.5		

Order in which the Counties appear with respect to mortality
from Pneumonia and Consumption.

PNEUMONIA.		CONSUMPTION.	
	Percentage to deaths from all specified causes.		Percentage to deaths from all specified causes.
Hampshire, . . .	8.7	Plymouth, . . .	24.63
Berkshire, . . .	8.2	Barnstable, . . .	21.08
Middlesex, . . .	8.1	Essex, . . .	20.70
Worcester, . . .	7.9	Dukes and Nantucket, .	19.11
Suffolk, . . .	7.1	Norfolk, . . .	18.97
Norfolk, . . .	6.6	Middlesex, . . .	18.97
Bristol, . . .	6.5	Worcester, . . .	18.79
Franklin, . . .	5.9	Bristol, . . .	18.69
Hampden, . . .	5.5	Franklin, . . .	18.69
Essex, . . .	5.5	Suffolk, . . .	18.14
Plymouth, . . .	3.8	Hampden, . . .	18.01
Barnstable, . . .	2.9	Hampshire, . . .	17.37
Dukes and Nantucket, .	0.6	Berkshire, . . .	16.31

It will be observed in the preceding table that the list of counties is almost reversed. In general terms, pneumonia was least fatal where consumption was most fatal, and *vice versa*. This is in accordance with the observations of 1865 and previous years, but it is even more clearly evident in 1866. The mortality from consumption is greatest in the counties bordering on the ocean, and least in the interior counties; the mortality from pneumonia is greatest in the interior counties, and least in the counties bordering on the ocean.

As regards season, the greatest mortality was in March, (232;) next, February, (214;) January, (185;) December, (177;) November, (171.) In these five months 59.7 of the whole mortality from pneumonia occurred. In July, August and September, the deaths were only 167.

As regards age, 612 cases were under five and 589 over fifty years of age. This leaves only 438 between the ages of five and fifty. Although pneumonia attacks all ages indiscriminately, it is seen to be chiefly fatal at the extremes of life.

(TABLES)

XXVth

ANNUAL REPORT

OF

BIRTHS, MARRIAGES, AND DEATHS,

REGISTERED IN

MASSACHUSETTS,

FOR THE YEAR ENDING DECEMBER 31, 1886.

TABLE I.—POPULATION, 1865—BIRTHS,

General Abstract, by Counties and Towns, of the Births, Marriages, and with the Population, according to the State Census for 1865,—distinct Persons Married, and the Sex and the aggregate and average ages of

THE STATE, AND COUNTIES.	Population State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am. Fa. and For. M.	For. Fa. and Am. M.	U.
MASSACHUSETTS, .	1,267,031	34,085	17,391	16,603	88	15,014	15,989	1,316	1,482	284
BARNSTABLE,	34,610	796	404	382	10	642	93	27	28	6
BERKSHIRE, .	56,944	1,587	842	743	2	781	704	45	74	33
BRISTOL, .	89,395	2,291	1,165	1,118	8	1,200	925	75	73	18
DUKES, .	4,200	77	36	41	—	65	5	2	4	1
ESSEX, .	171,034	4,638	2,446	2,178	14	2,355	1,833	219	217	14
FRANKLIN, .	31,340	612	315	296	1	413	166	11	17	5
HAMPDEN, .	64,570	1,792	927	858	7	720	933	47	62	30
HAMPSHIRE, .	39,269	973	495	476	2	513	383	36	26	15
MIDDLESEX, .	220,384	5,973	3,030	2,925	18	2,453	3,054	223	220	23
NANTUCKET, .	4,748	67	35	32	—	53	4	1	6	3
NORFOLK, .	116,306	3,114	1,572	1,536	6	1,222	1,574	136	166	16
PLYMOUTH, .	63,107	1,624	840	777	7	1,098	433	45	40	8
SUFFOLK, .	208,212	6,027	3,015	3,010	2	1,645	3,550	842	418	72
WORCESTER, .	162,912	4,514	2,272	2,231	11	1,904	2,332	107	131	40

MARRIAGES, AND DEATHS, 1866.

Deaths registered in Massachusetts during the year 1866—in connection with the Sex and the Percentage of Children Born, the Nativity of the number who Died.

MARRIAGES.						DEATHS.						
Couple.	NATIVITY.					Persons.	SEX.			No whose ages are registered.	AGE.	
	Am.	For	Am. M. and For Fe	For. M. and Am. Fe.	Unk.		M.	F.	U.		Agg'te.	Average.
14,423	8,485	4,017	767	939	220	23,637	11,601	12,003	33	23,502	726,888	30.92
359	313	24	7	12	3	497	274	219	4	492	17,699	35.97
648	414	156	26	40	12	918	473	442	3	911	32,209	35.36
970	587	258	47	52	26	1,609	773	832	4	1,597	53,216	33.32
44	37	1	3	2	1	64	40	24	—	64	2,616	40.87
2,063	1,325	466	84	142	46	3,136	1,450	1,682	4	3,116	93,488	30.00
301	263	21	4	7	6	500	247	252	1	497	18,919	38.07
811	483	229	40	35	24	1,228	602	622	4	1,220	35,640	29.21
462	300	121	15	17	9	665	316	346	3	655	22,932	35.01
2,304	1,289	697	116	177	25	4,362	2,104	2,254	4	4,332	133,021	30.70
52	50	—	2	—	—	90	47	43	—	90	4,946	54.96
916	525	264	55	67	5	1,913	937	973	3	1,890	59,094	31.27
610	507	57	9	29	8	1,023	516	507	—	1,021	40,882	40.04
3,025	1,252	1,196	295	259	23	4,675	2,395	2,279	1	4,671	119,826	25.65
1,863	1,140	527	64	100	32	2,957	1,427	1,528	2	2,946	92,400	31.36

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am.Fa. and For. M.	For.Fa. and Am. M.	Unk.
BARNSTABLE,	34,610	796	404	382	10	642	93	27	28	6
Barnstable, .	4,928	90	41	44	5	82	6	—	2	—
Brewster, .	1,456	83	21	12	—	80	8	—	—	—
Chatham, .	2,624	72	36	36	—	69	—	—	1	2
Dennis, .	3,592	84	39	45	—	76	2	3	3	—
Eastham, .	757	19	11	8	—	15	1	1	1	1
Falmouth, .	2,283	15	6	9	—	14	—	1	—	—
Harwich, .	3,540	82	48	32	2	73	—	5	3	1
Orleans, .	1,585	84	16	18	—	28	2	—	4	—
Provincetown, .	3,472	115	58	57	—	49	55	6	5	—
Sandwich, .	4,158	108	59	49	—	74	20	8	5	1
Truro, .	1,447	83	12	21	—	28	2	1	1	1
Wellfleet, .	2,296	61	32	26	3	57	1	2	1	—
Yarmouth, .	2,472	50	25	25	—	47	1	—	2	—
BERKSHIRE, .	56,944	1,587	842	743	2	731	704	45	74	33
Adams, .	8,298	287	163	124	—	112	145	5	17	8
Alford, .	461	8	7	1	—	8	—	—	—	—
Becket, .	1,393	17	11	6	—	5	11	—	—	1
Cheshire, .	1,650	43	19	23	1	15	25	2	1	—
Clarksburg, .	530	16	10	6	—	14	2	—	—	—
Dalton, .	1,137	30	18	12	—	13	14	1	1	1
Egremont, .	928	13	4	9	—	11	1	—	—	1
Florida, .	1,173	40	21	19	—	14	23	1	2	—
Gt. Barrington, .	3,920	100	41	59	—	59	31	2	7	1
Hancock, .	937	13	8	5	—	10	3	—	—	—
Hinsdale, .	1,517	63	35	28	—	24	34	1	2	2
Lanesborough, .	1,294	49	25	24	—	22	23	—	3	1
Lee, .	4,035	106	52	54	—	38	58	6	3	1
Lenox, .	1,660	57	33	24	—	21	34	1	1	—
Monterey, .	737	15	5	10	—	14	—	1	—	—
Mt. Washington, .	237	*	—	—	—	—	—	—	—	—
New Ashford, .	178	4	3	1	—	4	—	—	—	—
N. Marlborough, .	1,649	55	30	25	—	24	30	—	1	—
Otis, .	956	29	17	12	—	25	2	1	—	1
Peru, .	494	15	8	7	—	9	6	—	—	—
Pittsfield, .	9,676	290	162	128	—	99	152	16	18	5
Richmond, .	944	19	8	11	—	7	8	—	1	3
Sandisfield, .	1,411	24	12	12	—	15	7	1	1	—
Savoy, .	866	18	9	9	—	15	2	—	1	—
Sheffield, .	2,459	76	44	32	—	46	28	1	3	3
Stockbridge, .	1,967	33	18	15	—	14	15	—	3	1
Tyringham, .	650	22	10	12	—	12	9	1	—	—
Washington, .	859	14	9	5	—	11	1	—	2	—
W. Stockbridge, .	1,620	52	28	24	—	22	25	1	3	1
Williamstown, .	2,555	72	29	42	1	41	20	4	4	3
Windsor, .	753	7	3	4	—	7	—	—	—	—

* No Births.

1866.]

BIRTHS, MARRIAGES, AND DEATHS.

V

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
359	313	24	7	12	8	497	274	219	4	492	17,699	35.97
48	46	1	—	1	—	48	22	26	—	47	2,014	42.85
11	9	1	—	1	—	22	13	9	—	22	664	30.18
25	23	—	—	1	1	43	24	19	—	43	1,682	37.95
45	44	—	—	1	—	46	25	21	—	46	1,804	39.22
8	8	—	—	—	—	8	6	2	—	8	191	28.87
22	20	—	—	2	—	25	13	12	—	24	1,167	48.68
52	51	—	—	—	1	52	18	33	1	52	2,081	40.02
21	20	—	1	—	—	33	20	13	—	33	1,246	37.76
45	23	17	5	—	—	43	31	11	1	42	1,096	26.09
40	30	5	—	5	—	82	52	29	1	81	2,586	31.93
9	9	—	—	—	—	16	9	7	—	15	559	37.27
14	13	—	—	—	1	46	27	18	1	46	1,134	24.65
19	17	—	1	1	—	33	14	19	—	33	1,525	46.21
648	414	156	26	40	12	918	473	442	3	911	32,209	35.36
138	75	46	6	10	1	153	94	59	—	153	4,219	27.58
4	2	—	1	—	1	7	3	4	—	7	393	56.14
5	5	—	—	—	—	9	4	5	—	9	405	45.00
25	17	6	1	1	—	30	16	13	1	30	980	31.00
4	2	—	—	2	—	11	9	2	—	11	201	18.27
13	11	1	—	1	—	17	8	13	1	17	764	44.94
11	10	1	—	—	—	6	2	4	—	6	320	53.38
6	6	—	—	—	—	20	13	7	—	20	654	32.70
38	23	13	1	1	—	51	21	30	—	51	1,721	33.75
4	2	—	2	—	—	5	1	4	—	5	290	59.80
25	13	10	2	—	—	23	8	15	—	21	696	33.14
15	7	2	1	2	3	24	17	7	—	24	919	38.29
54	35	15	1	2	1	88	37	51	—	88	2,612	29.68
9	8	1	—	—	—	16	8	8	—	15	619	41.27
12	10	—	—	1	1	19	9	10	—	19	735	38.68
1	1	—	—	—	—	1	1	—	—	1	46	46.00
3	3	—	—	—	—	2	2	—	—	2	77	38.50
18	14	4	—	—	—	22	14	8	—	22	898	40.82
12	9	2	—	1	—	18	5	13	—	18	637	35.39
4	3	—	—	1	—	15	4	11	—	15	618	41.20
112	52	39	7	10	4	137	66	70	1	134	3,722	27.78
6	5	1	—	—	—	12	9	3	—	11	529	48.09
14	11	3	—	—	—	15	9	6	—	15	728	48.53
8	8	—	—	—	—	16	9	7	—	16	585	36.56
39	30	5	1	2	1	55	25	30	—	55	4,226	76.84
14	9	3	1	1	—	28	15	13	—	28	982	35.07
9	9	—	—	—	—	13	8	5	—	13	442	34.00
7	7	—	—	—	—	8	5	3	—	8	418	52.25
12	5	4	1	2	—	39	21	18	—	39	719	18.44
18	15	—	1	2	—	52	30	22	—	52	1,832	35.23
8	7	—	—	1	—	6	5	1	—	6	263	43.83

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am. Pa. and For. M.	For Fa. and Am. M.	Unk.
BRISTOL, .	89,895	2,291	1165	1118	8	1200	925	75	73	18
Acushnet, .	1,251	32	20	12	—	32	—	—	—	—
Attleborough, .	6,200	274	130	144	—	152	106	5	4	7
Berkley, .	847	10	5	5	—	10	—	—	—	—
Dartmouth, .	3,435	83	43	40	—	81	—	1	1	—
Dighton, .	1,813	57	29	25	3	35	17	—	3	2
Easton, .	3,076	65	36	29	—	24	39	2	—	—
Fairhaven, .	2,547	56	31	25	—	51	4	1	—	—
Fall River, .	17,481	516	252	262	2	138	335	17	22	4
Freetown, .	1,485	26	12	13	1	26	—	—	—	—
Mansfield, .	2,130	39	18	21	—	22	12	3	2	—
New Bedford, .	20,853	437	222	215	—	258	150	16	10	3
Norton, .	1,709	36	20	16	—	24	11	1	—	—
Raynham, .	1,868	57	22	35	—	43	11	2	1	—
Rehoboth, .	1,843	37	19	18	—	36	1	—	—	—
Seekonk, .	928	15	10	4	1	15	—	—	—	—
Somerset, .	1,789	16	12	4	—	11	—	3	2	—
Swansey, .	1,336	60	34	26	—	32	27	—	1	—
Taunton, .	16,005	422	219	203	—	159	210	24	27	2
Westport, .	2,799	53	31	21	1	51	2	—	—	—
DUKES, .	4,200	77	36	41	—	65	5	2	4	1
Chilmark, .	548	21	15	6	—	21	—	—	—	—
Edgartown, .	1,846	35	16	19	—	27	4	—	3	1
Gosnold, .	108	2	—	2	—	1	—	1	—	—
Tisbury, .	1,696	19	5	14	—	16	1	1	1	—
ESSEX, .	171,034	4,638	2446	2178	14	2355	1833	219	217	14
Amesbury, .	4,181	135	79	54	2	57	63	3	12	—
Andover, .	5,314	152	87	65	—	37	94	11	10	—
Beverly, .	5,942	145	77	68	—	121	16	4	4	—
Boxford, .	868	11	3	8	—	9	2	—	—	—
Bradford, .	1,566	41	19	22	—	30	8	1	2	—
Danvers, .	5,144	164	88	73	3	85	53	17	5	4
Essex, .	1,630	48	24	24	—	36	6	2	4	—
Georgetown, .	1,926	29	11	18	—	17	9	2	1	—
Gloucester, .	11,937	439	250	188	1	204	162	36	37	—
Groveland, .	1,619	38	20	18	—	26	10	1	1	—
Hamilton, .	799	16	7	9	—	12	1	3	—	—
Haverhill, .	10,740	304	156	147	1	172	112	7	13	—
Ipswich, .	3,311	60	37	23	—	49	8	3	—	—
Lawrence, .	21,698	757	386	371	—	134	580	14	28	1
Lynn, .	20,747	634	323	307	4	355	230	22	27	—
Lynnfield, .	725	15	6	9	—	12	2	1	—	—

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
970	587	258	47	52	26	1,609	773	832	4	1,597	53,216	33.32
14	14	—	—	—	—	16	9	7	—	15	658	43.53
68	37	20	5	5	1	133	69	64	—	133	4,359	32.77
4	4	—	—	—	—	12	8	4	—	12	481	40.08
37	36	—	1	—	—	53	27	26	—	53	2,712	51.21
19	17	1	—	—	1	18	9	8	1	18	603	33.50
12	10	2	—	—	—	43	19	24	—	43	1,356	31.53
22	21	—	—	—	1	39	22	17	—	39	1,902	48.77
225	83	103	15	17	7	430	202	228	—	429	10,066	23.46
10	10	—	—	—	—	25	11	12	2	25	924	36.96
9	6	—	2	—	1	32	9	23	—	32	1,156	36.12
240	142	76	9	12	1	337	158	178	1	333	10,386	31.59
12	12	—	—	—	—	32	13	19	—	32	1,097	34.28
14	12	1	1	—	—	31	17	14	—	31	968	31.23
19	19	—	—	—	—	34	21	13	—	34	1,878	55.23
9	8	1	—	—	—	11	8	3	—	11	603	54.82
10	9	1	—	—	—	32	16	16	—	32	1,182	36.94
15	15	—	—	—	—	21	16	5	—	21	933	44.43
206	109	52	14	18	13	272	121	151	—	268	10,209	38.09
25	23	1	—	—	1	38	18	20	—	36	1,748	48.56
44	37	1	3	2	1	64	40	24	—	64	2,616	40.87
10	10	—	—	—	—	6	4	2	—	6	330	55.00
23	18	1	1	2	1	26	13	13	—	26	1,061	40.81
•	—	—	—	—	—	—	—	—	—	—	—	—
11	9	—	2	—	—	32	23	9	—	32	1,225	38.28
2,063	1325	466	84	142	46	3,136	1450	1682	4	3,116	93,488	30.00
38	30	1	1	5	1	77	39	38	—	77	2,067	26.84
57	35	13	4	5	•	101	38	63	—	100	3,368	33.68
49	41	1	1	3	3	72	30	42	—	72	3,152	43.78
7	7	—	—	—	—	4	3	1	—	4	80	20.00
9	9	—	—	—	—	16	6	10	—	16	526	32.87
60	47	8	1	3	1	79	31	48	—	79	2,532	32.05
10	8	1	—	1	—	36	24	12	—	36	1,449	40.25
17	14	—	—	2	1	21	11	10	—	21	857	40.81
165	79	45	24	12	5	218	103	115	—	213	6,336	29.75
15	14	—	1	—	—	33	19	13	1	32	956	29.87
5	5	—	—	—	—	8	1	7	—	8	467	58.37
155	109	27	3	12	4	183	87	95	1	183	5,566	30.42
34	32	1	1	—	—	70	33	37	—	70	2,645	37.79
450	156	227	16	38	13	513	234	279	—	512	9,486	18.53
257	187	37	12	14	7	395	177	217	1	392	10,846	27.67
8	7	—	—	1	—	9	3	6	—	9	311	34.56

* No Marriages.

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am.Fa. and For. M.	For.Fa. and Am. M.	Unk.
Essex—Con.										
Manchester, .	1,643	53	30	23	—	40	5	3	8	2
Marblehead, .	7,308	264	131	133	—	189	54	10	10	1
Methuen, .	2,576	52	28	24	—	27	19	3	3	—
Middleton, .	922	21	11	10	—	15	2	3	1	—
Nahant, .	313	10	6	4	—	5	4	1	—	—
Newbury, .	1,362	28	19	9	—	23	3	—	2	—
Newburyport, .	12,976	302	163	137	2	184	133	24	10	1
N. Andover, .	2,622	51	27	24	—	15	30	4	2	—
Rockport, .	3,367	116	66	49	1	85	16	6	5	4
Rowley, .	1,191	25	9	16	—	23	—	—	1	1
Salem, .	21,189	284	147	137	—	170	83	18	13	—
Salisbury, .	3,609	101	55	46	—	66	29	—	6	—
Saugus, .	2,006	42	18	24	—	27	5	5	5	—
South Danvers, .	6,051	170	85	85	—	88	70	6	6	—
Swampscott, .	1,535	39	21	18	—	27	5	6	1	—
Topsfield, .	1,212	24	17	7	—	22	2	—	—	—
Wenham, .	918	21	8	13	—	17	3	1	—	—
W. Newbury, .	2,087	47	32	15	—	26	14	2	5	—
FRANKLIN, .										
Ashfield, .	1,221	18	11	6	1	16	—	1	1	—
Bernardston, .	902	12	5	7	—	12	—	—	—	—
Buckland, .	1,922	50	28	22	—	20	27	1	2	—
Charlemont, .	994	7	3	4	—	7	—	—	—	—
Coleraine, .	1,726	38	19	19	—	37	1	—	—	—
Conway, .	1,538	30	14	16	—	21	9	—	—	—
Deerfield, .	3,038	98	53	45	—	31	59	3	5	—
Erving, .	576	9	3	6	—	6	1	—	2	—
Gill, .	635	12	3	9	—	12	—	—	—	—
Greenfield, .	3,211	82	47	35	—	40	35	2	4	1
Hawley, .	687	17	11	6	—	17	—	—	—	—
Heath, .	642	4	2	2	—	4	—	—	—	—
Leverett, .	914	20	11	9	—	18	1	—	—	1
Leyden, .	592	11	7	4	—	7	3	—	1	—
Monroe, .	191	2	2	—	—	2	—	—	—	—
Montague, .	1,574	14	6	8	—	13	—	—	—	1
New Salem, .	1,116	12	4	8	—	12	—	—	—	—
Northfield, .	1,660	34	17	17	—	22	10	—	—	2
Orange, .	1,909	19	8	11	—	19	—	—	—	—
Rowe, .	563	8	5	3	—	8	—	—	—	—
Shelburne, .	1,564	28	16	12	—	23	4	1	—	—
Shutesbury, .	788	15	5	10	—	13	—	1	1	—
Sunderland, .	861	21	9	12	—	17	4	—	—	—
Warwick, .	901	17	10	7	—	13	2	1	1	—
Wendell, .	603	6	5	1	—	5	1	—	—	—
Whately, .	1,012	28	11	17	—	18	9	1	—	—

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
17	13	1	2	1	—	32	12	20	—	32	956	29·87
69	48	10	2	9	—	155	66	89	—	154	4,076	26·47
33	30	—	3	—	—	51	27	24	—	50	1,990	39·80
4	3	—	—	1	—	22	10	12	—	22	947	43·05
2	2	—	—	—	—	5	4	1	—	5	122	24·40
6	6	—	—	—	—	20	8	12	—	20	818	40·90
164	105	42	4	8	5	180	91	89	—	178	6,546	36·78
16	12	—	1	3	—	41	17	24	—	40	1,351	33·77
53	34	7	2	6	4	55	28	27	—	53	1,554	29·32
12	12	—	—	—	—	20	12	8	—	18	650	36·11
206	144	44	4	14	—	414	193	220	1	414	14,108	34·08
43	42	—	—	1	—	61	27	34	—	61	2,311	37·89
19	15	1	—	1	2	38	19	19	—	38	1,111	29·24
42	36	1	1	3	1	114	54	60	—	114	3,076	26·98
7	5	—	2	—	—	35	16	19	—	35	777	22·20
14	14	—	—	—	—	12	5	7	—	12	486	40·50
16	15	1	—	—	—	10	7	3	—	10	288	28·80
4	4	—	—	—	—	36	15	21	—	36	1,677	46·58
301	263	21	4	7	6	500	247	252	1	497	18,919	38·07
10	9	1	—	—	—	8	5	3	—	8	426	53·25
12	12	—	—	—	—	19	10	9	—	19	994	52·32
18	13	4	1	—	—	44	22	22	—	44	1,092	24·82
4	4	—	—	—	—	11	5	6	—	11	691	62·82
14	13	—	1	—	—	21	12	9	—	21	750	35·71
13	12	1	—	—	—	32	18	14	—	32	1,225	38·28
21	20	—	—	1	—	51	21	30	—	51	1,588	31·14
3	2	—	—	1	—	7	7	—	—	7	240	34·29
4	3	1	—	—	—	8	5	3	—	8	323	40·87
50	36	12	1	1	—	61	29	32	—	61	1,905	31·23
5	5	—	—	—	—	9	2	7	—	9	647	71·89
6	5	—	—	—	1	3	2	1	—	3	216	72·00
4	3	—	—	—	1	23	12	11	—	23	748	32·52
6	4	—	—	1	1	3	3	—	—	3	131	43·67
7	7	—	—	—	—	2	1	1	—	2	122	61·00
2	2	—	—	—	—	27	18	9	—	26	1,163	44·73
12	12	—	—	—	—	11	2	9	—	10	534	53·40
12	10	—	—	—	2	19	5	14	—	19	982	51·68
28	26	—	—	1	1	30	18	11	1	30	1,050	35·00
1	1	—	—	—	—	8	4	4	—	8	288	36·00
15	13	1	—	1	—	31	14	17	—	30	822	27·40
10	10	—	—	—	—	15	8	7	—	15	577	38·47
6	6	—	—	—	—	16	8	8	—	16	782	48·88
14	14	—	—	—	—	11	3	8	—	11	523	47·55
12	11	—	1	—	—	7	4	3	—	7	310	44·29
12	10	1	—	1	—	23	9	14	—	23	790	34·35

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am.Fa. and For. M.	For.Fa. and Am. M.	Unk.
HAMPDEN, .	64,570	1,792	927	858	7	720	933	47	62	30
Agawam, . . .	1,664	29	16	13	—	15	12	2	—	—
Blandford, . .	1,087	24	13	11	—	21	1	1	—	1
Brimfield, . .	1,316	30	10	20	—	19	8	2	—	1
Chester, . . .	1,266	30	17	13	—	25	4	—	1	—
Chicopee, . . .	7,577	232	123	109	—	51	167	8	4	2
Granville, . . .	1,367	33	14	19	—	23	10	—	—	—
Holland, . . .	368	6	4	2	—	5	1	—	—	—
Holyoke, . . .	5,648	220	121	99	—	82	175	7	6	—
Longmeadow, .	1,480	26	12	14	—	10	15	—	1	—
Ludlow, . . .	1,232	29	13	15	1	13	9	4	—	3
Monson, . . .	3,272	65	41	24	—	36	23	1	5	—
(St. Alms house,) .	—	26	12	14	—	4	14	—	3	5
Montgomery, .	353	4	1	3	—	4	—	—	—	—
Palmer, . . .	3,080	100	45	55	—	28	71	1	—	—
Russell, . . .	618	10	3	6	1	6	4	—	—	—
Southwick, . .	1,155	30	13	17	—	24	3	—	3	—
Springfield, .	22,035	621	327	294	—	257	311	17	33	3
Tolland, . . .	511	9	6	3	—	6	2	—	—	1
Wales, . . .	696	7	5	2	—	4	1	1	1	—
Westfield, . .	5,634	158	78	75	5	86	58	1	3	10
W. Springfield, .	2,100	65	34	31	—	26	35	1	2	1
Wilbraham, . .	2,111	38	19	19	—	25	9	1	—	3
HAMPSHIRE, .	39,269	973	495	476	2	513	383	36	26	15
Amherst, . . .	3,415	95	44	51	—	63	26	3	3	—
Belchertown, .	2,636	31	19	12	—	27	1	—	1	2
Chesterfield, .	801	18	7	11	—	17	—	1	—	—
Cummington, .	980	26	13	13	—	23	1	1	1	—
Easthampton, .	2,869	80	44	36	—	28	44	1	3	4
Enfield, . . .	997	25	10	15	—	14	6	—	2	3
Goshen, . . .	411	7	6	—	1	4	2	1	—	—
Granby, . . .	903	15	11	4	—	9	5	—	1	—
Greenwich, . .	648	5	2	3	—	5	—	—	—	—
Hadley, . . .	2,246	61	36	25	—	26	32	1	1	1
Hatfield, . . .	1,405	55	26	29	—	21	33	1	—	—
Huntington, . .	1,163	23	10	13	—	17	5	—	—	1
Middlefield, . .	727	14	6	8	—	7	6	—	—	1
Northampton, .	7,925	234	111	123	—	100	103	20	10	1
Pelham, . . .	737	9	6	3	—	9	—	—	—	—
Plainfield, . .	579	7	2	4	1	7	—	—	—	—
Prescott, . . .	596	7	5	2	—	7	—	—	—	—
South Hadley, .	2,099	49	29	20	—	30	14	5	—	—
Southampton, .	1,216	26	14	12	—	15	10	—	—	1
Ware, . . .	3,374	90	44	46	—	34	55	—	1	—
Westhampton, .	636	15	8	7	—	6	6	2	1	—

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
811	483	229	40	35	24	1,228	602	622	4	1,220	35,640	29.21
9	8	—	1	—	—	17	6	11	—	17	832	48.94
12	10	—	—	1	1	13	11	2	—	13	563	43.31
13	13	—	—	—	—	19	10	9	—	19	1,115	58.68
14	10	2	—	1	1	13	9	4	—	13	430	33.08
118	47	53	6	5	7	183	89	94	—	181	3,862	21.34
12	12	—	—	—	—	16	7	9	—	15	825	55.00
1	1	—	—	—	—	6	1	5	—	6	319	53.17
91	27	56	4	8	1	88	38	50	—	87	2,092	24.05
14	13	—	1	—	—	30	17	13	—	30	1,422	47.40
7	6	1	—	—	—	19	8	11	—	19	791	41.63
21	20	1	—	—	—	48	25	23	—	46	2,020	43.91
—	—	—	—	—	—	76	42	34	—	76	1,520	20.00
5	5	—	—	—	—	13	7	6	—	13	812	62.46
56	20	27	2	1	6	52	28	24	—	51	1,427	27.98
8	4	1	2	—	1	12	8	3	1	12	394	32.83
11	10	1	—	—	—	15	7	7	1	15	508	33.87
311	193	79	18	17	4	885	187	198	—	885	9,755	25.34
3	3	—	—	—	—	6	3	1	2	6	195	32.50
10	7	—	1	1	1	10	5	5	—	10	454	45.40
67	51	6	4	4	2	127	61	66	—	126	3,884	30.83
12	10	1	—	1	—	48	23	25	—	48	922	19.21
16	13	1	1	1	—	32	10	22	—	32	1,498	46.81
462	300	121	15	17	9	665	316	346	3	655	22,932	35.01
37	35	—	1	—	1	42	22	20	—	42	1,589	37.83
28	26	—	—	2	—	31	16	15	—	31	1,486	47.94
8	7	—	1	—	—	12	6	6	—	12	456	38.00
7	7	—	—	—	—	8	2	6	—	8	280	35.00
29	18	8	1	1	1	71	38	33	—	70	1,817	25.96
9	7	1	—	1	—	14	6	8	—	14	666	47.57
4	4	—	—	—	—	7	4	3	—	7	435	62.14
11	10	1	—	—	—	9	5	4	—	9	543	60.33
6	6	—	—	—	—	5	3	2	—	5	288	57.60
17	16	—	—	1	—	27	12	15	—	26	1,017	39.12
13	10	3	—	—	—	33	16	17	—	33	1,040	31.51
16	14	2	—	—	—	23	11	12	—	23	925	40.22
4	2	1	—	—	1	18	5	8	—	12	349	29.68
135	49	66	9	6	5	166	73	93	—	164	4,880	29.76
12	11	—	—	1	—	5	4	1	—	5	232	46.40
6	6	—	—	—	—	8	3	5	—	8	324	40.50
3	3	—	—	—	—	8	4	4	—	8	447	55.87
20	6	10	2	1	1	31	12	16	3	29	1,114	38.41
12	12	—	—	—	—	17	7	10	—	16	710	44.38
46	18	25	1	2	—	74	38	36	—	72	1,959	27.21
5	4	1	—	—	—	13	5	8	—	13	727	55.92

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am.Fa. and For. M.	For.Fa. and Am. M.	Unk.
HAMPS.—Con.										
Williamsburg, .	1,976	62	31	31	—	27	33	—	1	1
Worthington, .	925	19	11	8	—	17	1	—	1	—
MIDDLESEX.	220,384	5,978	3030	2925	18	2453	3054	223	220	23
Acton, .	1,660	39	21	18	—	31	8	—	—	—
Arlington,* .	2,760	61	29	32	—	21	36	2	2	—
Ashby, .	1,080	14	4	10	—	13	1	—	—	—
Ashland, .	1,702	47	26	21	—	27	19	1	—	—
Bedford, .	820	18	13	5	—	10	8	—	—	—
Belmont, .	1,279	27	14	13	—	10	16	1	—	—
Billerica, .	1,808	44	18	26	—	16	23	3	2	—
Boxborough, .	454	7	2	5	—	7	—	—	—	—
Brighton, .	3,854	142	72	70	—	50	82	4	6	—
Burlington, .	594	12	10	2	—	9	2	—	1	—
Cambridge, .	29,112	977	491	486	—	333	534	48	62	—
Carlisle, .	642	13	7	6	—	12	1	—	—	—
Charlestown, .	26,399	583	297	284	2	270	249	32	30	2
Chelmsford, .	2,291	55	22	33	—	25	24	4	2	—
Concord, .	2,232	40	20	20	—	16	21	1	1	1
Dracut, .	1,905	43	21	22	—	18	20	1	4	—
Dunstable, .	533	3	—	3	—	3	—	—	—	—
Framingham, .	4,665	82	36	46	—	31	41	7	3	—
Groton, .	3,176	86	46	39	1	47	36	3	—	—
Holliston, .	3,125	78	52	26	—	39	37	1	1	—
Hopkinton, .	4,132	142	63	78	1	31	106	3	2	—
Hudson, .	—	45	22	22	1	20	20	2	3	—
Lexington, .	2,220	47	21	26	—	24	23	—	—	—
Lincoln, .	711	14	3	11	—	5	9	—	—	—
Littleton, .	967	13	11	2	—	6	6	1	—	—
Lowell, .	30,990	809	411	398	—	250	515	26	18	—
Malden, .	6,840	195	97	98	—	97	84	8	6	—
Marlborough, .	7,164	250	125	125	—	71	172	6	1	—
Medford, .	4,839	105	44	61	—	52	46	—	5	2
Melrose, .	2,865	58	28	30	—	41	10	2	5	—
Natick, .	5,208	210	107	95	8	96	108	5	1	—
Newton, .	8,975	223	106	117	—	104	113	6	—	—
No. Reading, .	987	21	10	11	—	14	2	1	4	—
Pepperell, .	1,709	37	20	17	—	25	11	1	—	—
Reading, .	2,436	34	17	17	—	29	3	1	1	—
Sherborn, .	1,049	11	3	8	—	6	5	—	—	—
Shirley, .	1,217	26	15	11	—	14	12	—	—	—
Somerville, .	9,353	285	150	135	—	108	157	13	7	—
So. Reading, .	3,244	78	40	38	—	50	25	3	—	—
Stoneham, .	3,298	81	43	38	—	40	33	5	3	—
Stow, .	1,537	41	21	20	—	15	22	2	2	—
Sudbury, .	1,703	39	17	22	—	22	15	2	—	—
Tewksbury, .	1,801	23	12	11	—	20	1	—	2	—

* Name changed from West Cambridge April 13, 1867.

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
23	18	3	—	2	—	86	18	18	—	86	1,083	30·08
11	11	—	—	—	—	12	6	6	—	12	565	47·08
2,304	1289	697	116	177	25	4,362	2104	2254	4	4,332	183021	30·70
13	10	1	1	1	—	22	11	11	—	22	977	44·41
15	13	1	1	—	—	56	30	26	—	56	1,981	35·87
8	7	—	—	—	1	18	9	9	—	18	995	55·28
20	16	1	1	1	1	28	13	10	—	23	522	28·78
6	6	—	—	—	—	14	6	8	—	14	534	38·14
4	3	—	1	—	—	15	5	10	—	15	277	18·47
11	7	—	1	3	—	35	20	15	—	34	1,446	42·53
1	1	—	—	—	—	4	—	4	—	4	240	60·00
24	19	1	2	2	—	60	31	29	—	59	2,047	34·69
5	3	—	—	2	—	9	6	3	—	9	462	51·33
288	137	103	18	30	—	546	257	287	2	545	14,792	27·14
2	2	—	—	—	—	9	5	4	—	9	801	33·44
299	164	83	16	34	2	585	294	291	—	578	14,796	25·60
19	17	—	—	—	2	43	17	26	—	43	1,449	33·70
23	11	8	1	3	—	46	25	21	—	46	1,901	41·83
5	3	2	—	—	—	46	17	28	1	44	1,560	35·45
3	3	—	—	—	—	11	5	6	—	10	479	47·90
42	22	13	3	3	1	59	32	27	—	59	1,896	32·14
27	22	3	—	1	1	53	27	26	—	53	2,202	41·55
27	24	1	2	—	—	41	16	25	—	41	1,424	34·78
24	14	8	—	2	—	66	33	33	—	65	2,310	35·54
20	17	2	—	1	—	22	11	11	—	22	866	39·36
9	7	—	2	—	—	31	15	16	—	30	1,212	40·40
4	4	—	—	—	—	6	3	3	—	6	404	67·88
7	7	—	—	—	—	12	5	7	—	12	541	45·08
626	284	266	28	45	8	749	352	396	1	742	21,108	28·45
63	43	10	3	7	—	108	52	56	—	108	3,072	28·44
79	31	88	3	7	—	98	56	42	—	98	1,933	19·73
56	34	16	2	4	—	56	23	33	—	55	1,590	28·91
21	13	4	1	2	1	46	18	28	—	45	1,787	39·71
40	28	6	3	2	1	96	48	48	—	96	2,727	28·41
55	22	21	3	5	4	114	52	62	—	114	3,527	30·94
5	5	—	—	—	—	17	9	8	—	17	758	44·59
13	10	—	—	2	1	33	15	18	—	33	1,638	49·64
14	7	2	4	1	—	41	23	18	—	41	1,691	41·24
8	8	—	—	—	—	18	6	12	—	17	675	39·71
16	11	4	1	—	—	26	6	20	—	26	983	37·81
32	24	4	8	1	—	226	110	116	—	226	6,060	26·81
30	17	6	6	1	—	62	29	33	—	62	2,531	40·82
25	21	2	2	—	—	58	27	31	—	57	1,582	27·75
16	11	4	—	1	—	19	8	11	—	19	744	39·16
9	8	1	—	—	—	24	12	12	—	24	1,023	42·62
8	6	—	—	2	—	15	6	9	—	15	827	55·18

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am Fa and For M	For.Fa. and Am. M.	Unk.
MIDDLEX—Con. (St. Alms house,)	—	94	53	41	—	19	54	8	4	9
Townsend, .	2,042	45	24	21	—	35	5	1	3	1
Tyngsborough, .	578	5	2	3	—	5	—	—	—	—
Waltham, .	6,896	208	108	93	2	85	99	5	10	4
Watertown, .	8,779	96	49	46	1	28	61	4	3	—
Wayland, .	1,137	25	13	13	—	16	5	1	3	—
Westford, .	1,568	40	21	17	2	24	11	—	3	2
Weston, .	1,231	18	11	7	—	13	5	—	—	—
Wilmington, .	850	20	11	9	—	17	1	1	1	—
Winchester, .	1,968	63	37	26	—	33	27	2	1	—
Woburn, .	6,999	206	115	91	—	50	130	6	18	2
NANTUCKET,	4,748	67	35	32	—	53	4	1	6	3
NORFOLK, .	116,806	3,114	1572	1536	6	1222	1574	136	166	16
Bellingham, .	1,240	20	9	11	—	15	2	—	1	2
Braintree, .	8,725	71	38	32	1	40	23	2	5	1
Brookline, .	5,262	158	79	79	—	48	101	3	6	—
Canton, .	8,318	74	46	27	1	25	37	4	7	1
Cohasset, .	2,048	59	34	25	—	29	23	3	3	1
Dedham, .	7,195	177	91	86	—	61	102	8	5	1
Dorchester, .	10,717	271	124	147	—	114	125	12	19	1
Dover, .	616	7	1	6	—	3	4	—	—	—
Foxborough, .	2,778	52	26	23	3	29	19	2	1	1
Franklin, .	2,510	41	22	19	—	27	12	2	—	—
Medfield, .	1,012	20	8	12	—	10	7	3	—	—
Medway, .	8,219	92	41	51	—	53	17	20	1	1
Milton, .	2,770	68	34	34	—	32	33	1	2	—
Needham, .	2,793	79	36	43	—	18	50	5	6	—
Quincy, .	6,718	186	105	81	—	72	94	9	10	1
Randolph, .	5,734	169	87	82	—	76	74	7	11	1
Roxbury, .	28,426	873	459	414	—	216	563	35	58	1
Sharon, .	1,393	31	11	20	—	19	11	1	—	—
Stoughton, .	4,855	150	71	79	—	68	63	6	11	2
Walpole, .	2,018	34	17	16	1	21	12	—	—	1
West Roxbury, .	6,912	154	64	90	—	55	84	8	7	—
Weymouth, .	7,975	285	152	133	—	163	106	5	10	1
Wrentham, .	8,072	43	17	26	—	23	12	—	3	—
PLYMOUTH, .	63,107	1,624	840	777	7	1098	433	45	40	8
Abington, .	8,576	281	128	153	—	150	114	10	6	1
Bridgewater, .	4,196	94	58	36	—	41	45	3	4	1
(St. Alms house,)	—	30	15	15	—	2	28	—	—	—

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couples.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'ts.	Average.
-	-	-	-	-	-	250	130	120	-	248	7,675	30.95
23	20	2	-	1	-	31	16	15	-	31	1,573	50.74
5	3	-	-	1	1	19	6	13	-	19	686	86.11
98	46	40	2	4	4	166	87	79	-	166	3,885	23.40
44	24	16	1	2	1	43	21	22	-	42	1,531	36.45
7	7	-	-	-	-	17	8	9	-	17	802	47.18
14	10	1	1	2	-	22	10	12	-	21	928	44.19
6	5	-	-	1	-	21	11	10	-	21	935	44.52
10	10	-	-	-	-	12	7	5	-	12	711	59.25
16	8	5	2	-	1	31	14	17	-	31	1,281	41.32
59	32	22	2	3	-	112	49	63	-	112	4,144	37.00
52	50	-	2	-	-	90	47	43	-	90	4,946	54.96
916	525	264	55	67	5	1,913	937	973	3	1,890	59,094	31.27
3	3	-	-	-	-	17	10	5	2	17	823	48.41
25	22	-	2	1	-	56	21	35	-	56	1,984	35.43
44	17	26	-	1	-	80	47	33	-	80	1,542	19.27
30	17	11	1	1	-	40	23	17	-	40	1,490	37.25
12	7	4	-	1	-	28	12	16	-	28	712	25.45
59	28	25	6	-	-	116	64	52	-	115	3,741	32.53
95	52	32	6	5	-	171	79	92	-	170	5,245	30.85
2	2	-	-	-	-	5	1	4	-	5	303	60.60
15	13	-	1	1	-	38	17	21	-	38	1,409	37.08
20	16	2	-	2	-	44	16	28	-	44	2,144	48.73
10	10	-	-	-	-	17	7	10	-	17	728	42.82
27	21	4	-	2	-	50	22	28	-	49	1,693	34.55
25	10	7	4	4	-	38	18	20	-	38	1,362	35.84
18	8	7	3	-	-	58	29	24	-	51	1,683	33.00
45	29	10	2	2	2	120	56	64	-	120	4,431	36.92
43	24	9	3	7	-	75	44	31	-	75	2,284	30.45
235	88	103	18	24	2	569	276	293	-	556	14,489	26.06
11	3	4	-	4	-	20	12	8	-	19	865	45.53
42	35	4	-	3	-	75	36	39	-	75	2,636	35.15
14	13	-	-	1	-	40	23	17	-	40	1,447	36.17
32	25	2	3	2	-	94	35	58	1	94	3,071	32.67
77	55	13	4	5	-	130	68	62	-	129	3,815	29.57
32	27	1	2	1	1	37	21	16	-	34	1,197	35.21
610	507	57	9	29	8	1,023	516	507	-	1,021	40,882	40.04
85	63	16	2	2	2	116	61	55	-	116	3,500	30.17
37	23	8	1	4	1	44	30	14	-	44	2,109	47.93
-	-	-	-	-	-	108	51	57	-	108	3,626	33.57

TABLE L.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am. Fa. and For. M.	For. Fa. and Am. M.	Unk.
PLYM'TH—Con.										
Carver, . . .	1,059	10	7	8	—	10	—	—	—	—
Duxbury, . . .	2,384	61	30	30	1	59	—	1	1	—
E. Bridgewater, . . .	2,976	63	26	37	—	47	12	2	2	—
Halifax, . . .	722	18	8	10	—	15	1	1	1	—
Hanover, . . .	1,545	82	18	14	—	25	7	—	—	—
Hanson, . . .	1,196	41	26	15	—	38	1	1	—	1
Hingham, . . .	4,176	102	53	49	—	57	40	3	1	1
Hull, . . .	260	6	3	3	—	5	1	—	—	—
Kingston, . . .	1,626	31	15	15	1	21	6	4	—	—
Lakeville, . . .	1,110	31	17	14	—	26	8	2	—	—
Marion, . . .	960	19	8	11	—	18	—	1	—	—
Marshfield, . . .	1,809	37	20	17	—	34	1	1	1	—
Mattapoisett, . . .	1,451	23	12	10	1	22	—	1	—	—
Middleborough, . . .	4,565	85	44	41	—	66	18	—	1	—
N. Bridgewater, . . .	6,332	228	116	108	4	121	89	1	15	2
Pembroke, . . .	1,489	39	19	20	—	38	—	—	1	—
Plymouth, . . .	6,068	139	76	63	—	106	25	6	2	—
Plympton, . . .	924	15	8	7	—	12	1	1	—	1
Rochester, . . .	1,156	21	8	13	—	21	—	—	—	—
Scituate, . . .	2,269	54	35	19	—	44	8	2	—	—
South Scituate, . . .	1,635	44	26	18	—	38	3	1	1	1
Wareham, . . .	2,798	83	42	41	—	58	20	3	2	—
W. Bridgewater, . . .	1,825	37	22	15	—	24	10	1	2	—
SUFFOLK, . . .	208,212	6,027	3015	3010	2	1645	3550	342	418	72
Boston, . . .	192,318	5,543	2805	2737	1	1403	3347	325	397	71
Chelsea, . . .	14,403	429	180	249	—	215	178	16	20	—
North Chelsea, . . .	858	27	15	11	1	19	7	—	—	1
Winthrop, . . .	638	28	15	13	—	8	18	1	1	—
WORCESTER, . . .	162,912	4,514	2272	2231	11	1904	2332	107	131	40
Ashburnham, . . .	2,153	53	25	28	—	26	25	—	—	2
Athol, . . .	2,814	44	19	25	—	35	8	—	1	—
Auburn, . . .	959	16	6	10	—	9	6	1	—	—
Barre, . . .	2,856	48	26	22	—	29	13	4	2	—
Berlin, . . .	1,061	28	16	12	—	22	5	—	1	—
Blackstone, . . .	4,857	171	87	84	—	27	138	3	3	—
Bolton, . . .	1,502	44	18	31	—	33	11	—	—	—
Boylston, . . .	792	15	6	9	—	8	4	2	1	—
Brookfield, . . .	2,101	61	32	29	—	43	16	—	2	—
Charlton, . . .	1,925	26	15	11	—	24	1	—	1	—
Clinton, . . .	4,021	143	77	64	2	51	82	4	4	2
Dana, . . .	789	9	4	5	—	9	—	—	—	—
Douglas, . . .	2,155	70	34	36	—	31	31	3	5	—

registered during the year 1866—Continued.

MARRIAGES.						DEATHS.						
Couple.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
11	10	1	—	—	—	12	5	7	—	11	237	30.64
25	23	—	—	2	—	33	13	20	—	33	1,568	47.51
26	24	2	—	—	—	46	29	17	—	46	1,798	39.09
8	3	—	—	—	—	10	6	4	—	10	497	49.70
19	18	—	—	1	—	33	18	15	—	33	1,848	40.85
14	14	—	—	—	—	17	7	10	—	17	773	45.47
27	24	1	2	—	—	50	18	32	—	50	2,287	45.74
2	2	—	—	—	—	4	3	1	—	4	151	37.75
9	8	1	—	—	—	23	7	16	—	23	981	42.65
7	7	—	—	—	—	15	12	3	—	15	601	40.06
4	2	—	1	1	—	16	6	10	—	16	654	40.87
13	13	—	—	—	—	28	8	20	—	28	1,184	42.28
19	19	—	—	—	—	27	16	11	—	27	1,442	53.41
38	35	1	1	1	—	56	26	30	—	56	2,581	46.09
82	48	22	1	11	—	104	57	47	—	104	8,223	30.99
18	17	1	—	—	—	27	13	14	—	27	1,169	43.29
65	57	2	1	8	2	108	48	60	—	108	4,408	40.81
9	9	—	—	—	—	17	10	7	—	17	779	45.82
19	18	—	—	1	—	9	5	4	—	9	515	57.22
21	20	1	—	—	—	32	18	14	—	31	1,464	47.26
16	16	—	—	—	—	28	12	16	—	28	1,445	51.61
21	15	1	1	2	2	40	22	18	—	40	1,491	37.27
20	19	—	1	—	—	20	15	5	—	20	951	47.55
3,025	1,252	1,196	295	259	23	4,675	2,395	2,279	1	4,671	119,826	25.65
2,828	1,127	1,147	281	251	22	4,377	2,212	2,135	—	4,373	112,197	25.66
191	120	48	14	8	1	281	143	137	1	281	6,926	24.65
3	3	—	—	—	—	9	6	3	—	9	345	38.33
3	2	1	—	—	—	8	4	4	—	8	358	44.75
1,863	1,140	527	64	100	32	2,957	1,427	1,528	2	2,946	92,400	31.36
13	11	1	—	1	—	41	23	18	—	41	1,330	32.44
35	30	2	1	2	—	35	12	23	—	35	1,302	37.20
5	4	1	—	—	—	6	3	3	—	6	246	41.00
30	28	1	—	1	—	39	18	21	—	39	1,637	41.97
12	8	2	1	—	1	16	6	10	—	16	732	45.75
86	28	52	2	4	—	67	38	29	—	67	1,430	21.34
6	6	—	—	—	—	26	13	13	—	26	1,128	43.38
9	7	2	—	—	—	14	7	7	—	14	751	53.64
24	16	5	2	—	1	34	18	16	—	34	1,132	33.29
10	10	—	—	—	—	39	22	17	—	39	1,488	38.15
54	22	24	1	6	1	88	42	46	—	88	2,120	24.09
12	10	—	—	—	2	8	4	4	—	8	443	55.37
29	18	8	2	1	—	41	25	16	—	41	1,162	28.34

TABLE I.—*Births, Marriages, and Deaths,*

Counties and Towns.	Population. State Census, 1865.	BIRTHS.								
		Whole No.	SEX.			PARENTAGE.				
			M.	F.	Unk.	Am.	For.	Am. Fa. and For. M.	For. Fa. and Am. M.	Unk.
WORCES'R- <i>Con.</i>										
Dudley, . . .	2,076	77	40	87	—	22	52	8	—	—
Fitchburg, . .	8,118	252	184	118	—	128	105	16	8	—
Gardner, . . .	2,558	69	82	87	—	87	26	4	2	—
Grafton, . . .	3,961	113	60	53	—	41	67	8	2	—
Hardwick, . .	1,967	47	22	25	—	26	20	—	—	1
Harvard, . . .	1,855	20	9	11	—	11	8	—	—	1
Holden, . . .	1,846	27	15	12	—	16	9	—	1	1
Hubbardston, .	1,546	21	11	10	—	19	2	—	—	—
Lancaster, . .	1,752	17	13	4	—	11	4	2	—	—
Leicester, . .	2,527	64	88	26	—	34	25	3	2	—
Leominster, . .	3,813	75	85	39	1	54	18	8	—	—
Lunenburg, . .	1,167	22	11	11	—	21	1	—	—	—
Mendon, . . .	1,207	36	20	16	—	27	8	—	—	1
Milford, . . .	9,108	823	155	168	—	70	242	5	4	2
Millbury, . . .	3,780	139	56	83	—	33	94	6	6	—
New Braintree, .	752	12	5	7	—	7	5	—	—	—
Northborough, .	1,623	33	13	20	—	13	14	1	5	—
Northbridge, .	2,642	92	46	46	—	38	48	3	3	—
N. Brookfield, .	2,514	64	31	33	—	21	42	1	—	—
Oakham, . . .	925	15	9	6	—	13	1	1	—	—
Oxford, . . .	2,713	56	33	23	—	30	23	2	1	—
Paxton, . . .	626	8	5	3	—	6	2	—	—	—
Petersham, . .	1,428	23	13	10	—	22	1	—	—	—
Phillipston, . .	725	17	8	9	—	15	1	—	1	—
Princeton, . .	1,239	22	16	6	—	21	1	—	—	—
Royalston, . .	1,441	25	13	11	1	20	4	—	1	—
Rutland, . . .	1,011	23	13	10	—	20	2	—	1	—
Shrewsbury, . .	1,570	36	23	13	—	24	8	4	—	—
Southborough, .	1,750	50	28	22	—	18	29	—	3	—
Southbridge, .	4,131	102	42	60	—	19	81	1	1	—
Spencer, . . .	3,024	119	59	60	—	27	88	1	3	—
Sterling, . . .	1,668	34	21	13	—	26	6	2	—	—
Sturbridge, . .	1,993	31	16	15	—	15	15	—	1	—
Sutton, . . .	2,363	69	39	30	—	43	22	3	1	—
Templeton, . .	2,390	64	33	31	—	38	23	1	2	—
Upton, . . .	2,018	49	29	20	—	27	19	—	3	—
Uxbridge, . . .	2,838	78	33	44	1	33	45	—	—	—
Warren, . . .	2,180	78	36	42	—	36	35	2	3	2
Webster, . . .	3,608	106	47	59	—	26	71	4	5	—
Westborough, .	3,141	94	50	44	—	35	49	4	6	—
W. Boylston, . .	2,294	69	37	32	—	33	31	1	4	—
W. Brookfield, .	1,549	40	22	18	—	25	15	—	—	—
Westminster, .	1,639	27	14	13	—	23	4	—	—	—
Winchendon, . .	2,801	81	45	33	3	39	11	1	3	27
Worcester, . .	30,055	967	482	482	3	299	615	13	39	1

registered during the year 1866—Concluded.

MARRIAGES.						DEATHS.						
Couple.	NATIVITY.					Persons.	SEX.			No. whose ages are registered.	AGE.	
	Am.	For.	Am. M. and For. Fe.	For. M. and Am. Fe.	Unk.		M.	F.	Unk.		Agg'te.	Average.
16	14	1	—	1	—	42	22	20	—	42	1,313	31.26
123	77	36	2	8	—	175	89	86	—	174	5,678	32.63
25	21	3	—	—	1	36	21	15	—	36	900	25.00
42	27	11	3	1	—	47	21	26	—	47	1,392	29.62
23	13	8	1	1	—	25	12	13	—	25	1,010	40.40
10	9	1	—	—	—	26	10	16	—	26	1,319	50.73
22	19	1	1	1	—	81	9	22	—	81	1,457	47.00
15	15	—	—	—	—	17	6	11	—	17	916	53.88
24	18	3	—	—	8	16	8	8	—	16	617	38.56
18	10	6	—	2	—	45	18	27	—	45	1,624	36.09
21	17	2	2	—	—	68	34	34	—	68	2,798	41.15
11	9	—	—	1	1	20	9	11	—	20	1,158	57.90
9	9	—	—	—	—	19	8	11	—	19	1,121	59.00
96	52	32	2	7	8	155	86	69	—	155	3,979	25.67
41	15	18	3	5	—	75	40	35	—	74	2,108	28.49
10	8	2	—	—	—	14	5	9	—	13	784	56.46
17	11	4	2	—	—	17	7	10	—	17	608	35.76
38	22	11	3	1	1	44	18	26	—	44	1,017	28.11
20	13	5	1	1	—	55	29	26	—	55	1,283	23.83
5	5	—	—	—	—	18	9	9	—	18	940	52.22
31	23	6	—	1	1	52	26	26	—	52	2,043	39.29
3	2	—	—	1	—	10	5	5	—	10	403	40.80
9	8	—	1	—	—	20	11	9	—	20	953	47.65
10	9	—	—	1	—	11	4	7	—	11	407	37.00
9	7	1	1	—	—	17	8	9	—	17	1,058	62.23
11	11	—	—	—	—	28	17	11	—	27	1,160	42.96
5	3	2	—	—	—	19	3	16	—	19	741	39.00
14	11	2	1	—	—	28	19	9	—	28	1,200	42.86
20	15	5	—	—	—	25	12	13	—	24	666	27.75
53	19	30	3	1	—	117	52	65	—	117	2,003	17.12
22	9	4	3	4	2	62	27	35	—	62	1,681	27.11
14	14	—	—	—	—	25	14	11	—	25	1,076	43.04
14	12	1	1	—	—	26	9	17	—	26	997	38.35
23	18	2	2	—	1	42	19	23	—	41	1,719	41.93
28	28	—	—	—	—	50	20	30	—	50	1,641	32.82
19	18	1	—	—	—	22	10	12	—	21	689	32.81
22	11	7	—	2	2	44	23	21	—	44	1,600	36.36
32	17	9	—	3	3	24	15	9	—	24	771	32.12
76	18	48	3	6	1	73	24	48	1	71	1,106	15.58
34	23	8	—	3	—	45	25	20	—	45	1,142	25.88
20	9	4	3	2	2	25	11	14	—	25	736	29.44
12	8	2	—	—	2	34	15	19	—	34	1,099	32.32
14	14	—	—	—	—	19	9	10	—	18	809	44.94
34	26	2	1	1	4	48	21	26	1	48	1,957	40.77
423	225	151	16	31	—	692	336	356	—	691	17,870	25.87

TABLE II.—BIRTHS.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Children BORN ALIVE during the year

1866.

Year and Months.	SEX.	STAFF.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
THE YEAR.	Totals	34085	796	1587	2291	144	4638	612	1792	973	5973	3114	1624	6027	4514
	Males	17894	404	842	1165	71	2446	315	927	495	3030	1572	840	3015	2272
	Fem.,	16603	382	743	1118	73	2178	296	858	476	2925	1536	777	3010	2231
	Unk.,	88	10	2	8	—	14	1	7	2	18	6	7	2	11
Jan.	Totals	2,313	63	103	167	10	290	40	124	47	392	204	119	431	323
	Males	1,209	30	53	97	6	177	21	58	24	206	108	55	199	175
	Fem.,	1,101	33	50	70	4	113	19	64	23	186	96	64	232	147
	Unk.,	8	—	—	—	—	—	—	2	—	—	—	—	—	1
Feb.	Totals	2,228	43	107	159	8	299	43	99	59	388	193	109	413	308
	Males	1,137	20	50	75	4	139	23	50	36	210	92	60	214	164
	Fem.,	1,086	23	57	83	4	159	20	49	23	177	101	49	199	142
	Unk.,	5	—	—	1	—	1	—	—	—	1	—	—	—	2
March.	Totals	2,659	45	116	167	12	378	44	133	89	513	221	135	476	330
	Males	1,351	19	58	101	6	206	24	56	41	261	111	68	235	165
	Fem.,	1,305	26	58	66	6	172	20	76	47	251	110	67	241	165
	Unk.,	3	—	—	—	—	—	—	1	1	1	—	—	—	—
April.	Totals	2,695	53	135	178	12	377	44	142	70	465	251	123	484	361
	Males	1,396	27	78	95	5	200	24	70	36	236	129	67	242	187
	Fem.,	1,291	26	56	83	7	175	19	72	34	228	122	55	241	173
	Unk.,	8	—	1	—	—	2	1	—	—	1	—	1	1	1
May.	Totals	2,683	36	129	182	19	341	42	150	73	455	239	115	531	371
	Males	1,327	17	65	104	10	184	22	75	36	218	118	54	255	169
	Fem.,	1,352	17	64	78	9	156	20	74	37	237	121	61	276	202
	Unk.,	4	2	—	—	—	1	—	1	—	—	—	—	—	—
June.	Totals	2,628	51	135	174	10	370	51	134	74	421	240	131	485	352
	Males	1,348	33	75	89	3	190	28	76	35	209	124	62	244	180
	Fem.,	1,276	18	60	85	7	180	23	57	39	211	116	69	241	170
	Unk.,	4	—	—	—	—	—	—	1	—	1	—	—	—	2

TABLE II.—Concluded.

Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
July.	Totals	3,057	77	160	197	18	420	51	141	98	537	264	143	532	419
	Males	1,574	46	91	105	7	207	29	71	52	275	131	76	260	224
	Fem.,	1,475	30	69	90	11	212	22	70	46	259	133	66	272	195
	Unk.,	8	1	—	2	—	1	—	—	—	3	—	1	—	—
Aug.	Totals	3,052	88	180	189	7	420	49	174	80	547	283	149	542	394
	Males	1,529	49	63	87	3	240	22	86	40	272	147	74	272	174
	Fem.,	1,521	38	67	102	4	180	27	87	40	275	136	75	270	220
	Unk.,	2	1	—	—	—	—	—	1	—	—	—	—	—	—
Sept.	Totals	3,136	104	153	214	11	422	62	174	92	556	286	174	493	395
	Males	1,558	51	82	90	4	200	26	97	43	280	144	99	243	199
	Fem.,	1,571	53	71	123	7	221	36	77	49	274	141	74	250	195
	Unk.,	7	—	—	1	—	1	—	—	—	2	1	1	—	1
Oct.	Totals	3,248	87	138	234	16	466	69	176	95	557	302	128	545	435
	Males	1,626	33	74	120	12	233	37	97	48	271	151	71	269	210
	Fem.,	1,613	52	64	114	4	232	32	79	47	285	150	56	275	223
	Unk.,	9	2	—	—	—	1	—	—	—	1	1	1	1	2
Nov.	Totals	3,139	72	141	215	9	447	58	167	92	531	322	156	538	391
	Males	1,672	42	79	92	5	250	33	96	45	289	162	86	298	195
	Fem.,	1,453	28	61	122	4	192	25	70	47	240	159	69	240	196
	Unk.,	14	2	1	1	—	5	—	1	—	2	1	1	—	—
Dec.	Totals	3,223	77	138	207	12	407	59	177	102	607	307	142	557	431
	Males	1,659	37	72	108	6	220	26	94	59	303	155	68	284	227
	Fem.,	1,548	38	66	98	6	185	33	83	43	299	150	72	273	202
	Unk.,	16	2	—	1	—	2	—	—	—	5	2	2	—	2
Not stated.	Totals	24	—	2	8	—	1	—	1	2	4	2	—	—	4
	Males	8	—	2	2	—	—	—	1	—	—	—	—	—	3
	Fem.,	11	—	—	4	—	1	—	—	1	3	1	—	—	1
	Unk.,	5	—	—	2	—	—	—	—	1	1	1	—	—	—

SUPPLEMENT A.
PLURALITY BIRTHS—1866.

[Included in Tables I. and II.]

THE YEAR.																	
		Totals,	708	11	41	38	6	116	10	36	22	182	-	70	40	111	*85
Jan.	Males,	362	5	29	20	4	64	6	25	12	69	-	39	19	36	34	
	Fem.,	346	9	17	18	2	52	4	11	10	63	-	31	21	57	51	
	Totals,	708	14	46	38	6	116	10	36	22	132	-	70	40	93	85	
Feb.	Males,	20	1	4	-	-	1	-	-	-	3	-	2	1	8	-	
	Fem.,	38	1	2	2	-	3	-	-	-	5	-	2	1	12	6	
	Totals,	58	2	6	2	-	4	-	-	-	8	-	4	2	20	6	
March.	Males,	28	-	1	1	-	1	-	4	2	5	-	3	2	2	2	
	Fem.,	27	2	1	1	-	7	2	2	-	3	-	3	-	4	2	
	Totals,	55	2	2	2	-	8	2	6	2	8	-	6	2	6	4	
April.	Males,	44	-	4	-	-	8	-	-	-	18	-	4	4	2	4	
	Fem.,	24	-	-	-	-	5	-	-	-	11	-	1	4	-	3	
	Totals,	68	-	4	-	-	13	-	-	-	29	-	5	8	2	7	
May.	Males,	42	-	5	2	1	7	1	-	-	6	-	4	3	8	5	
	Fem.,	32	-	1	2	1	1	1	-	-	3	-	4	1	6	7	
	Totals,	74	-	6	4	2	8	2	-	-	14	-	8	4	14	12	
June.	Males,	68	-	6	6	-	8	-	-	1	16	-	4	6	8	10	
	Fem.,	38	-	4	4	-	3	-	-	1	8	-	1	5	4	11	
	Totals,	106	-	10	10	-	11	-	-	2	24	-	5	11	12	21	
July.	Males,	27	-	1	-	-	6	-	2	2	2	-	12	4	9	6	
	Fem.,	26	-	3	-	-	6	-	-	-	-	-	4	3	5	5	
	Totals,	53	-	4	-	-	12	-	2	2	2	-	16	7	14	11	
Aug.	Males,	30	2	4	-	2	14	-	2	6	10	-	2	2	2	8	
	Fem.,	34	2	2	-	1	8	-	1	4	8	-	1	-	1	6	
	Totals,	64	4	6	-	3	22	-	3	10	18	-	3	2	3	14	
Sept.	Males,	40	2	1	2	-	10	2	4	1	10	-	5	-	1	2	
	Fem.,	32	-	3	-	-	8	-	-	1	4	-	1	4	7	4	
	Totals,	72	2	4	2	-	18	2	4	2	14	-	6	4	8	6	

* Two cases of Triplets occurred in 1866,—one of which was in Suffolk and the other in Worcester County,—and each comprising one male and two females.

SUPPLEMENT A—Continued.

Year and Month.	SEX.	State.	Barnstable.	Berkshire.	Bristol.	Dukes.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Nantucket.	Norfolk.	Plymouth.	Suffolk.	Worcester.
Sept.	Totals,	58	2	4	8	—	—	2	14	—	12	—	—	6	4	6
	Males,	32	—	3	4	—	—	2	9	—	6	—	—	4	1	3
	Fem.,	26	2	1	4	—	—	—	5	—	6	—	—	2	3	3
Oct.	Totals,	54	—	—	4	2	10	—	4	2	12	—	8	4	6	2
	Males,	32	—	—	3	2	8	—	3	1	7	—	3	1	3	1
	Fem.,	22	—	—	1	—	2	—	1	1	5	—	5	3	3	1
Nov.	Totals,	59	2	6	6	—	10	—	—	4	2	—	10	2	6	11
	Males,	22	—	4	2	—	4	—	—	1	1	—	4	2	1	3
	Fem.,	37	2	2	4	—	6	—	—	3	1	—	6	—	5	8
Dec.	Totals,	60	—	—	4	—	16	2	4	—	10	—	6	—	8	10
	Males,	34	—	—	2	—	13	1	2	—	6	—	5	—	1	4
	Fem.,	26	—	—	2	—	3	1	2	—	4	—	1	—	7	6

SUPPLEMENT B.

ILLEGITIMATE BIRTHS—1866.

[Included in Tables I. and II.]

Year and Month.	SEX.	Stam.	Barnstable.	Berkshire.	Bristol.	Dukes.	Essex.	Franklin.	Hampden.*	Hampshire.	Middlesex.†	Nantucket.	Norfolk.	Plymouth.‡	Suffolk.	Worcester.
THE YEAR.	Totals,	281	5	21	19	1	28	4	23	7	65	3	8	48	40	14
	Males,	147	3	6	12	—	16	3	13	3	37	2	6	20	18	8
	Fem.,.	131	1	15	5	1	12	1	10	4	28	1	2	28	22	6
	Unk.,.	3	1	—	2	—	—	—	—	—	—	—	—	—	—	—
Jan.	Totals,	26	—	—	—	—	4	1	1	2	6	—	—	10	1	1
	Males,	15	—	—	—	—	1	1	—	1	5	—	—	6	—	1
	Fem.,.	11	—	—	—	—	3	—	1	1	1	—	—	4	1	—
Feb.	Totals,	13	—	1	2	—	2	—	—	—	2	—	—	5	1	—
	Males,	8	—	1	—	—	1	—	—	—	2	—	—	4	—	—
	Fem.,.	4	—	—	1	—	1	—	—	—	—	—	—	1	1	—
	Unk.,.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—
March.	Totals,	32	2	1	2	—	5	1	3	1	9	—	—	4	4	—
	Males,	19	2	—	2	—	4	1	1	—	6	—	—	1	2	—
	Fem.,.	13	—	1	—	—	1	—	2	1	3	—	—	3	2	—
April.	Totals,	18	—	2	—	—	2	—	2	—	2	1	1	4	2	2
	Males,	9	—	1	—	—	2	—	1	—	—	—	—	2	1	2
	Fem.,.	9	—	1	—	—	—	—	1	—	2	1	1	2	1	—
May.	Totals,	23	—	2	—	1	2	1	3	—	7	—	1	1	4	1
	Males,	10	—	—	—	—	1	1	3	—	1	—	1	—	3	—
	Fem.,.	13	—	2	—	1	1	—	—	—	6	—	—	1	1	1
June.	Totals,	24	1	3	—	—	3	—	3	—	6	—	1	1	4	2
	Males,	15	1	2	—	—	1	—	1	—	4	—	1	1	2	2
	Fem.,.	9	—	1	—	—	2	—	2	—	2	—	—	—	2	—
July.	Totals,	32	—	2	4	—	—	—	1	1	7	—	1	5	9	2
	Males,	14	—	—	3	—	—	—	1	—	2	—	1	3	4	—
	Fem.,.	17	—	2	—	—	—	—	—	1	5	—	—	2	5	2
	Unk.,.	1	—	—	1	—	—	—	—	—	—	—	—	—	—	—

* 16 at State Almshouse, Monson.

† 52 at State Almshouse, Tewksbury.

‡ 30 at State Almshouse, Bridgewater.

SUPPLEMENT B.—Concluded.

Months.	SEX.	Gloucester.	Barnstable.	Berkshire.	Bristol.	Devon.											
Aug.	Totals,	22	-	4	2	-	2	-	-	-	4	-	-	5	4	1	
	Males,	8	-	-	1	-	2	-	-	-	2	-	-	1	1	1	
	Fem.,	14	-	4	1	-	-	-	-	-	2	-	-	4	3	-	
Sept.	Totals,	18	1	1	2	-	1	-	2	1	5	-	1	1	2	1	
	Males,	8	-	-	1	-	-	-	2	1	2	-	1	-	1	-	
	Fem.,	10	1	1	1	-	1	-	-	-	3	-	-	1	1	1	
Oct.	Totals,	20	-	4	2	-	2	-	4	-	3	1	-	2	-	2	
	Males,	12	-	1	1	-	1	-	2	-	3	1	-	1	-	2	
	Fem.,	8	-	3	1	-	1	-	2	-	-	-	-	1	-	-	
Nov.	Totals,	27	-	1	2	-	2	1	1	2	3	-	2	1	6	1	
	Males,	15	-	1	2	-	1	-	-	1	5	-	1	-	4	-	
	Fem.,	12	-	-	-	-	1	1	1	1	3	-	1	1	2	1	
Dec.	Totals,	26	1	-	3	-	1	-	3	-	6	1	1	4	3	1	
	Males,	13	-	-	2	-	2	-	2	-	5	1	1	1	-	-	
	Fem.,	11	-	-	1	-	1	-	1	-	1	-	-	3	3	1	
	Unk.,	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	

TABLE III.—STILLBORN.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Still-births during the year

1866.

Year and Months.	SEX.	State.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
THE YEAR.	Totals, .	1,046	21	12	62	5	135	9	21	14	156	99	26	396	90
	Males, .	545	12	1	39	2	65	4	9	4	90	44	8	214	53
	Fem., .	410	4	2	19	2	54	5	10	10	48	45	15	170	26
	Unk., .	91	5	9	4	1	16	—	2	—	18	10	8	12	11
Jan.	Totals, .	78	1	—	5	—	7	—	2	—	10	10	—	31	7
	Males, .	43	1	—	3	—	4	—	1	—	6	5	—	17	6
	Fem., .	25	—	—	2	—	3	—	—	—	3	4	—	12	1
	Unk., .	5	—	—	—	—	—	—	1	—	1	1	—	2	—
Feb.	Totals, .	87	—	—	4	1	10	1	1	2	13	4	2	42	7
	Males, .	49	—	—	3	1	6	1	—	1	11	1	—	20	5
	Fem., .	36	—	—	1	—	4	—	1	1	2	3	2	20	2
	Unk., .	2	—	—	—	—	—	—	—	—	—	—	—	2	—
March.	Totals, .	93	4	1	5	—	9	—	2	2	16	8	3	37	6
	Males, .	48	3	—	3	—	4	—	1	1	5	3	—	24	4
	Fem., .	34	1	—	2	—	5	—	1	1	7	4	3	11	1
	Unk., .	11	—	1	—	—	2	—	—	—	4	1	—	2	1
April.	Totals, .	69	—	—	4	—	9	1	1	—	21	10	—	15	8
	Males, .	29	—	—	3	—	3	—	—	—	14	4	—	2	3
	Fem., .	33	—	—	1	—	6	1	1	—	4	5	—	13	5
	Unk., .	7	—	—	—	—	3	—	—	—	3	1	—	—	—
May.	Totals, .	97	—	1	2	1	15	2	—	1	18	10	1	39	7
	Males, .	41	—	—	1	—	7	1	—	—	10	3	—	18	1
	Fem., .	47	—	—	—	1	7	1	—	1	7	7	—	19	4
	Unk., .	9	—	1	1	—	1	—	—	—	1	—	1	2	2
June.	Totals, .	102	8	—	7	1	17	—	2	1	12	12	4	33	10
	Males, .	57	1	—	4	1	11	—	1	1	7	7	1	19	4
	Fem., .	33	1	—	2	—	4	—	1	—	5	4	2	13	1
	Unk., .	12	1	—	1	—	2	—	—	—	—	1	1	1	5

TABLE III.—Continued.

[illegible]

TABLE IV.—MARRIAGES.

Distinguishing by Counties, and by Months, the Number of Marriages registered during the year

1866.

Year and Months.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Nantucket.	Norfolk.	Plymouth.	Suffolk.	Worcester.
THE YEAR, . . .	1	359	648	970	44	2068	301	811	163	2304	52	916	610	3025	1863
January, . . .		48	50	96	4	161	33	84	35	189	6	71	57	285	148
February, . . .		44	41	62	9	149	16	66	25	154	3	80	44	283	126
March, . . .		22	52	40	5	104	22	44	35	96	6	44	44	117	113
April, . . .		26	56	76	2	171	27	49	43	210	1	57	49	311	177
May, . . .		27	50	55	2	190	33	85	41	194	4	80	50	261	193
June, . . .		15	39	92	4	153	18	63	33	181	1	82	40	245	171
July, . . .		26	55	67	3	147	16	60	40	168	1	56	40	228	112
August, . . .		17	44	51	3	124	16	40	27	154	6	53	22	256	122
September, . .	1,201	27	54	74	2	169	26	61	41	219	5	70	43	255	140
October, . . .		24	63	109	4	212	27	82	38	228	9	42	40	307	161
November, . .		68	73	122	2	291	44	101	64	332	5	131	104	329	247
December, . .		35	38	90	4	187	25	43	40	184	5	80	57	198	141
Unknown, . . .		1	15	—	—	3	—	—	1	—	—	—	5	—	0

TABLE V.—MARRIAGES.

Exhibiting the Social Condition and Ages, respectively, of parties Married during the year

1866.

AGGREGATE—Of all conditions.

AGE OF MALES.	AGE OF FEMALES.														
	ALL AGES.														
										55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	Unknown.
ALL AGES	14,428	2,778	6,423	2,869	1,086	561	308	157	81	50	19	23	■	2	117
Under 20,	288	188	98	5	-	-	-	-	-	-	-	-	-	-	2
20 to 25, .	5,276	1,719	3,053	440	■	6	2	-	-	-	-	-	-	-	11
25 to 30, .	4,564	696	2,385	1,297	180	40	7	1	-	-	-	-	-	-	8
30 to 35, .	1,808	135	637	667	284	■	14	4	-	-	-	-	-	-	7
35 to 40, .	904	28	203	250	247	132	■	8	-	-	1	-	-	-	8
40 to 45, .	511	10	58	118	128	■	68	■	2	-	-	-	-	-	■
45 to 50, .	882	4	35	61	89	94	■	35	2	2	-	-	-	-	-
50 to 55, .	225	1	4	22	80	60	42	38	■	4	-	-	-	-	-
55 to 60, .	175	1	6	7	28	82	40	80	18	10	8	-	-	-	-
60 to 65, .	118	1	1	1	5	13	26	22	20	■	4	4	-	-	2
65 to 70, .	53	-	-	-	1	6	2	6	■	9	8	■	8	-	-
70 to 75, .	30	-	1	-	-	1	7	3	2	5	2	5	■	-	-
75 to 80, .	11	-	-	-	-	-	-	1	1	1	1	4	2	1	-
Over 80, .	■	-	-	-	-	-	1	-	-	-	-	1	-	1	-
Unknown,	85	-	-	1	1	1	-	-	1	-	-	-	-	-	■

(A.) First Marriage of both Parties.

ALL AGES	11,094	2,645	5,798	2,070	889	111	28	■	6	2	1	—	—	—	46
Under 20,	276	182	90	■	—	—	—	—	—	—	—	—	—	—	—
20 to 25, .	5,017	1,694	2,940	851	23	1	—	—	—	—	—	—	—	—	8
25 to 30, .	4,041	645	2,178	1,092	■	16	1	—	—	—	—	—	—	—	6
30 to 35, .	1,193	100	469	465	135	20	2	—	—	—	—	—	—	—	2
35 to 40, .	363	17	■	111	94	42	6	—	—	—	—	—	—	—	—
40 to 45, .	97	4	12	28	28	18	7	8	—	—	—	—	—	—	2
45 to 50, .	50	2	9	17	8	9	■	2	—	—	—	—	—	—	—
50 to 55, .	15	—	—	1	2	4	1	2	3	■	—	—	—	—	—
55 to 60, .	11	1	2	1	1	1	3	—	2	—	—	—	—	—	—
60 to 65, .	2	—	—	—	—	—	—	1	—	—	1	—	—	—	—
65 to 70, .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
70 to 75, .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
75 to 80, .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Over 80, .	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Unknown,	29	—	—	—	—	—	—	—	1	—	—	—	—	—	■

TABLE VI.—DEATHS.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Persons who Died during the year

1866.

Year and Months.	SEX.	MASS.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
THE YEAR.	Totals	23637	497	918	1609	154	3136	500	1228	665	4362	1913	1023	4675	2057
	Males,	11601	274	473	773	87	1400	247	602	316	2104	937	510	2296	1427
	Fem.,	12003	219	442	832	67	1736	252	622	349	2254	978	507	2279	1528
	Unk.,	33	4	3	4	—	4	1	4	3	4	3	—	1	—
Jan.	Totals	1,910	39	77	133	10	265	56	86	54	351	129	96	363	251
	Males,	952	26	35	66	7	124	27	44	26	166	68	48	184	131
	Fem.,	958	13	42	67	3	141	29	44	28	185	61	48	179	120
	Unk.,	2	—	—	—	—	—	—	—	—	2	—	—	—	—
Feb.	Totals	1,	38	74	117	11	247	49	83	40	328	159	68	315	234
	Males,	—	24	41	59	6	181	24	40	20	163	80	34	169	111
	Fem.,	—	14	33	58	5	116	24	43	20	164	79	34	146	123
	Unk.,	—	—	—	—	—	—	1	—	—	1	—	—	—	—
March.	Totals	2,	54	76	129	8	270	42	99	58	387	102	102	401	250
	Males,	—	30	36	66	5	110	19	49	28	183	77	53	194	117
	Fem.,	1,	23	40	71	3	160	23	50	29	184	85	49	207	133
	Unk.,	—	1	—	—	—	—	—	—	1	—	—	—	—	—
April.	Totals	1,	40	52	137	21	250	26	93	71	300	152	100	367	221
	Males,	—	20	28	56	11	117	12	47	32	140	66	44	195	100
	Fem.,	—	20	24	81	10	133	14	46	39	162	85	56	172	121
	Unk.,	—	—	—	—	—	—	—	—	1	1	1	—	—	—
May.	Totals	1,	26	83	114	21	216	53	82	85	328	152	80	339	221
	Males,	—	11	38	53	9	84	24	38	30	158	77	34	163	120
	Fem.,	—	15	45	61	12	131	29	44	55	170	75	46	176	101
	Unk.,	—	—	—	—	—	1	—	—	—	—	—	—	—	—
June.	Totals	1,642	34	63	93	9	210	30	72	48	311	137	65	334	226
	Males,	833	16	31	49	7	105	15	42	26	145	74	39	173	109
	Fem.,	808	18	30	44	2	105	15	30	22	166	63	26	161	117
	Unk.,	1	—	—	—	—	—	—	1	—	—	—	—	—	—

TABLE VI.—Concluded.

Month.	SEX.	State.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
July.	Pers.,	2,201	36	65	153	15	309	30	126	45	404	188	87	480	268
	Males,	1,157	24	35	72	10	163	18	61	16	220	98	50	262	138
	Fem.,	1,043	12	30	81	5	146	12	65	29	184	95	37	218	129
	Unk.,	1	—	—	—	—	—	—	—	—	—	—	—	—	1
Aug.	Pers.,	2,551	50	91	195	11	852	57	167	70	449	201	92	492	324
	Males,	1,266	28	53	97	9	170	24	89	32	226	94	52	236	156
	Fem.,	1,281	21	38	97	2	182	33	77	38	223	107	40	255	168
	Unk.,	4	1	—	1	—	—	—	1	—	—	—	—	1	—
Sept.	Pers.,	2,226	61	93	142	20	278	43	113	66	421	173	94	441	281
	Males,	1,082	33	46	75	10	110	23	56	31	195	90	36	243	134
	Fem.,	1,137	28	46	66	10	166	20	57	34	226	82	58	198	146
	Unk.,	7	—	1	1	—	2	—	—	1	—	1	—	—	1
Oct.	Pers.,	1,944	33	80	128	11	272	42	110	64	363	188	73	394	236
	Males,	954	20	38	69	7	121	22	50	29	166	68	37	210	117
	Fem.,	987	12	42	58	4	151	20	59	35	197	70	36	184	119
	Unk.,	3	1	—	1	—	—	—	1	—	—	—	—	—	—
Nov.	Pers.,	1,878	36	75	119	7	241	37	89	48	370	155	85	407	209
	Males,	883	16	42	56	2	109	19	38	24	165	68	47	207	90
	Fem.,	993	20	32	62	5	132	18	51	24	205	87	38	200	119
	Unk.,	2	—	1	1	—	—	—	—	—	—	—	—	—	—
Dec.	Pers.,	1,871	48	83	147	10	226	35	95	33	366	165	81	342	240
	Males,	895	25	45	62	4	106	20	50	18	176	80	42	159	103
	Fem.,	973	23	37	85	6	119	15	45	15	190	84	39	183	137
	Unk.,	3	—	1	—	—	1	—	—	—	—	1	—	—	—
Unk.	Pers.,	20	62	6	2	—	—	—	3	3	1	2	—	—	1
	Males,	11	1	3	1	—	—	—	—	2	1	2	—	—	1
	Fem.,	7	—	3	1	—	—	—	2	1	—	—	—	—	—
	Unk.,	2	1	—	—	—	—	—	1	—	—	—	—	—	—

TABLE VII—DEATHS BY AGE AND SEX,

Distinguishing by Age and by Sex, the Number of Deaths registered in each County distinguishing Sex, according to the State Census of 1865,—and also with the

State and Counties.	Population— State Census, 1865.		Percentage of Deaths to Pop.	No. of Deaths Regist'd 1865.	Under 1	1 to 2	2 to 3	3 to 4	4 to 5	5 to 10	10 to 15
MASSACHUSETTS {	1,267,081	Per.	1.87	23,637	4,699	1,569	757	509	343	950	559
	602,010	Ma.	1.98	11,601	2,551	898	868	276	163	479	267
	665,021	Fe.	1.80	12,008	2,091	769	889	281	180	471	292
	-	U.	-	88	27	2	-	2	-	-	-
BARNSTABLE Co., {	34,610	Per.	1.44	497	65	17	17	18	5	20	12
	17,048	Ma.	1.61	274	38	12	6	12	2	12	7
	17,567	Fe.	1.25	219	24	5	11	6	3	8	5
	-	U.	-	4	3	-	-	-	-	-	-
BERKSHIRE COUNTY, {	56,944	Per.	1.61	918	159	45	32	21	12	50	23
	27,724	Ma.	1.71	473	99	27	17	14	4	25	11
	29,220	Fe.	1.51	442	67	18	15	7	8	25	12
	-	U.	-	3	3	-	-	-	-	-	-
BRISTOL COUNTY, {	89,336	Per.	1.79	1,609	310	116	34	23	27	48	39
	42,786	Ma.	1.81	773	172	60	16	7	11	25	17
	46,609	Fe.	1.79	832	134	59	18	15	16	23	22
	-	U.	-	4	4	-	-	-	-	-	-
DUKE COUNTY, {	4,200	Per.	1.52	64	6	-	2	1	-	4	2
	2,047	Ma.	1.95	40	2	-	1	-	-	-	2
	2,153	Fe.	1.11	24	4	-	1	1	-	4	-
ESSEX COUNTY, {	171,084	Per.	1.83	3,136	670	222	97	72	44	138	71
	80,164	Ma.	1.81	1,450	375	112	44	42	21	59	27
	90,870	Fe.	1.85	1,682	294	110	53	29	23	79	44
	-	U.	-	4	8	-	-	1	-	-	-
FRANKLIN COUNTY, {	31,340	Per.	1.60	500	57	22	23	10	9	23	13
	15,459	Ma.	1.60	247	34	9	13	6	8	12	10
	15,881	Fe.	1.59	252	23	12	10	4	6	11	3
	-	U.	-	1	-	1	-	-	-	-	-
HAMPDEN COUNTY, {	64,570	Per.	1.90	1,228	244	94	53	27	22	45	27
	30,566	Ma.	1.97	602	131	47	20	14	10	21	17
	34,004	Fe.	1.83	623	110	46	33	13	12	24	10
	-	U.	-	4	3	1	-	-	-	-	-
HAMPSHIRE Co., {	30,269	Per.	1.69	665	99	27	30	15	9	23	21
	13,265	Ma.	1.73	316	61	12	13	7	3	15	8
	20,614	Fe.	1.66	346	38	15	17	8	6	18	13
	-	U.	-	3	2	-	-	-	-	-	-
MIDDLESEX COUNTY, {	220,334	Per.	1.96	4,362	836	301	147	88	51	176	95
	104,115	Ma.	2.02	2,104	464	156	82	45	23	87	46
	116,269	Fe.	1.94	2,254	368	145	65	43	28	89	49
	-	U.	-	4	4	-	-	-	-	-	-
NANTUCKET Co., {	4,748	Per.	1.90	90	6	1	-	1	-	4	-
	2,158	Ma.	2.13	47	4	1	-	1	-	3	-
	2,590	Fe.	1.66	43	2	-	-	-	-	1	-
NORFOLK COUNTY, {	116,306	Per.	1.64	1,913	394	109	56	40	20	98	43
	54,796	Ma.	1.70	937	201	53	22	17	12	54	19
	61,510	Fe.	1.58	973	191	56	34	23	8	44	24
	-	U.	-	3	2	-	-	1	-	-	-
PLYMOUTH COUNTY, {	62,107	Per.	1.62	1,023	153	42	19	11	11	26	15
	30,772	Ma.	1.66	516	89	29	11	5	3	17	10
	32,335	Fe.	1.57	507	69	13	8	6	8	9	5
SUFFOLK COUNTY, {	203,312	Per.	2.25	4,675	1,152	366	132	111	85	169	96
	96,529	Ma.	2.43	2,395	603	192	86	59	43	87	51
	111,683	Fe.	2.04	2,279	543	174	66	52	37	82	45
	-	U.	-	1	1	-	-	-	-	-	-
WORCESTER Co., {	162,912	Per.	1.82	2,957	543	207	116	72	48	121	97
	79,196	Ma.	1.80	1,427	303	83	57	47	23	62	42
	83,716	Fe.	1.83	1,523	233	109	58	25	25	59	55
	-	U.	-	2	2	-	-	-	-	-	-

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	SEX.	Per ct. to Pop.	Persons	Sex.					
BARNSTABLE CO.	34,610	{ Tot. 34,610 Ma. 17,043 Fe. 17,567 U. .	. 1.44 . .	. 497 . .	497 274 219 4	65 38 24 3	17 12 5 —	17 6 11 —	18 12 6 —	5 2 3 —
Barnstable, .	4,928	{ Ma. 2,359 Fe. 2,569	.97	48	22 26	1 1	1 1	— 2	— 1	— —
Brewster, .	1,456	{ Ma. 696 Fe. 760	1.51	22	13 9	5 —	— —	1 —	— —	— 1
Chatham, .	2,624	{ Ma. 1,288 Fe. 1,336	1.64	43	24 19	2 2	3 1	1 1	3 —	— —
Dennis, .	3,592	{ Ma. 1,753 Fe. 1,839	1.28	46	25 21	3 2	1 —	— —	— —	— 1
Eastham, .	757	{ Ma. 391 Fe. 366	1.06	8	6 2	1 2	— —	1 —	— —	— —
Falmouth, .	2,283	{ Ma. 1,140 Fe. 1,143	1.10	25	13 12	3 —	— —	— —	— 1	— —
Harwich, .	3,540	{ Ma. 1,788 Fe. 1,752 U. .	1.47 . .	52 . .	18 33 1	2 2 1	— — —	— — —	— 1 —	— — —
Orleans, .	1,585	{ Ma. 755 Fe. 830	2.08	33	20 13	1 —	— —	— —	2 1	1 —
Provincetown, .	3,472	{ Ma. 1,754 Fe. 1,718 U. .	1.24 . .	43 . .	31 11 1	8 3 1	4 1 —	— — —	1 — —	— — —
Sandwich, .	4,158	{ Ma. 2,047 Fe. 2,111 U. .	1.97 . .	82 . .	52 29 1	4 7 —	— 1 —	2 4 —	5 — —	1 1 —
Truro, .	1,447	{ Ma. 703 Fe. 744	1.11	16	9 7	1 1	— —	— —	— —	— —
Wellfleet, .	2,296	{ Ma. 1,172 Fe. 1,124 U. .	2.00 . .	46 . .	27 18 1	5 3 1	3 1 —	1 3 —	— 1 —	— — —
Yarmouth, .	2,472	{ Ma. 1,197 Fe. 1,275	1.34	33	14 19	2 1	— —	— 1	1 1	— —
BERKSHIRE CO.,	56,944	{ Tot. 56,944 Ma. 27,724 Fe. 29,220 U. .	. 1.61 . .	. 918 . .	918 473 442 8	159 99 57 3	45 27 18 —	32 17 15 —	21 14 7 —	12 4 8 —
Adams, .	3,296	{ Ma. 3,989 Fe. 4,309	1.34	153	94 59	23 8	6 4	5 —	2 1	— 1
Alford, .	461	{ Ma. 236 Fe. 225	1.52	7	3 4	1 —	— —	— —	— —	— —
Becket, .	1,393	{ Ma. 701 Fe. 692	.65	9	4 5	1 1	— —	— —	— —	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	over 100	Unknown
20 12 8	12 7 5	28 22 16	31 21 10	19 10 9	26 10 16	24 16 8	16 9 7	12 7 5	9 3 6	16 7 9	20 12 8	26 16 10	23 12 11	39 17 22	18 10 8	14 8 6	6 3 3	1 1 1	5 2 1	
1 1	- 1	2 2	8 1	2 -	1 -	1 2	1 1	- -	- -	- -	2 1	1 2	3 4	1 5	1 1	- -	- -	- -	1 -	
-	1	-	-	-	1	1	-	-	-	1	-	1	1	-	1	-	1	-	-	
1	-	1	-	1	1	-	1	2	-	-	1	1	3	2	-	-	1	-	-	
-	1	-	-	-	4	1	-	-	-	1	1	1	2	3	1	-	-	-	-	
1	-	3	3	1	2	1	2	-	-	1	1	2	1	1	2	-	-	-	-	
-	1	1	2	3	1	-	-	2	1	-	-	2	-	3	1	1	-	-	-	
-	-	-	1	-	-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	
-	-	2	1	-	-	1	-	-	1	-	-	1	-	-	-	4	-	-	-	
-	-	-	1	1	1	1	-	-	-	-	2	-	-	-	2	-	2	-	1	
2	-	4	3	-	5	3	1	-	-	2	1	-	-	4	2	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	1	4	2	1	2	1	1	-	-	-	-	2	2	-	-	-	-	-	-	
1	-	-	1	1	-	1	1	-	-	2	1	-	-	2	2	-	-	-	-	
1	1	2	2	-	-	2	1	-	1	1	2	1	1	-	1	-	1	-	1	
-	-	1	-	1	1	-	-	1	-	-	1	1	1	-	-	-	-	-	-	
3	-	5	2	1	2	2	1	2	1	2	1	4	1	5	3	3	-	-	-	
3	2	1	-	1	1	-	1	1	2	-	-	-	-	2	-	1	-	-	1	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	1	-	-	1	-	1	1	1	-	-	1	-	1	-	-	-	-	-	1	
-	-	1	1	-	-	-	-	-	-	1	-	1	-	-	1	-	-	-	-	
2	3	3	2	2	1	1	-	1	-	-	1	1	-	1	-	-	-	-	-	
-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	3	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1	-	1	2	1	-	1	-	1	-	-	2	-	-	3	-	1	-	-	-	
-	-	-	2	-	1	1	-	-	-	2	-	-	2	3	-	1	1	1	-	
50 25 25	23 11 12	48 20 28	53 24 29	33 14 19	33 15 18	33 15 18	23 11 12	35 19 16	31 20 11	33 14 19	40 22 18	56 35 21	43 21 22	47 16 31	34 17 17	18 8 13	4 - 4	4 2 2	7 5 2	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
3	2	6	5	3	3	6	3	2	2	4	3	5	1	2	2	-	-	1	-	
3	2	4	4	3	3	3	5	-	3	5	1	2	1	-	2	3	1	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	2	-	-	-	-	1	-	1	-	-	-	-	
-	-	1	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	
-	-	-	1	-	-	-	-	1	-	-	-	-	-	1	-	1	-	-	-	

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Berkshire—Con.</i>										
Cheshire, . .	1,650	{ Ma. 825 Fe. 825 U. .	1·82	30	16 13 1	4 1 1	1 — —	2 1 —	— — —	— — —
Clarksburg, .	530	{ Ma. 283 Fe. 247	2·08	11	9 2	2 —	— —	— 1	1 —	1 —
Dalton, . .	1,137	{ Ma. 547 Fe. 590 U. .	1·49	17	8 13 1	1 — 1	— — —	— — —	— — —	— — —
Egremont, . .	928	{ Ma. 443 Fe. 485	·65	6	2 4	— —	— —	— —	— —	— —
Florida, . .	1,173	{ Ma. 720 Fe. 453	1·70	20	13 7	2 1	1 1	— —	1 —	— —
Gt. Barrington, .	3,920	{ Ma. 1,774 Fe. 2,146	1·30	51	21 30	6 7	1 —	1 —	— —	— 1
Hancock, . .	937	{ Ma. 466 Fe. 471	·53	5	1 4	— —	— —	— —	— —	— —
Hinsdale, . .	1,517	{ Ma. 720 Fe. 797	1·48	23	8 15	2 2	— —	1 1	— —	— 1
Lanesborough, .	1,294	{ Ma. 642 Fe. 652	1·35	24	17 7	3 1	1 —	— 2	1 1	— —
Lee, . .	4,035	{ Ma. 1,870 Fe. 2,165	2·18	88	37 51	6 9	4 4	— 2	2 —	— 1
Lenox, . .	1,660	{ Ma. 813 Fe. 847	·96	16	8 8	— —	— 1	1 1	— 1	— —
Monterey, . .	737	{ Ma. 376 Fe. 361	2·58	19	9 10	3 —	— —	— —	— —	— —
Mt. Washington,	237	{ Ma. 122 Fe. 115	·42	1	1 —	— —	— —	— —	— —	— —
New Ashford, .	178	{ Ma. 95 Fe. 83	1·12	2	2 —	— —	1 —	— —	— —	— —
New Marlboro', .	1,649	{ Ma. 809 Fe. 840	1·33	22	14 8	3 1	— —	— —	— —	— —
Otis, . .	956	{ Ma. 486 Fe. 470	1·83	18	5 13	1 2	— —	1 1	— 1	— —
Peru, . .	494	{ Ma. 254 Fe. 240	3·04	15	4 11	— —	— —	— —	1 —	— —
Pittsfield, . .	9,676	{ Ma. 4,661 Fe. 5,015 U. .	1·42	137	66 70 1	16 14 1	6 5 —	2 1 —	2 1 —	2 1 —
Richmond, . .	944	{ Ma. 480 Fe. 464	1·27	12	9 3	— —	— —	— —	1 —	— —
Sandisfield, .	1,411	{ Ma. 725 Fe. 686	1·06	15	9 6	1 2	— —	— 1	— —	— —

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.			DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.		Per ct. to Pop.	Persons.	Sex.					
<i>Berkshire—Con.</i>											
Savoy, . . .	866	{ Ma.	431	1.85	16	9	1	1	—	—	—
		{ Fe.	435			7	—	—	1	—	—
Sheffield, . .	2,459	{ Ma.	1,188	2.24	55	25	6	1	—	—	—
		{ Fe.	1,271			30	1	—	1	—	—
Stockbridge, .	1,967	{ Ma.	871	1.42	28	15	3	—	—	—	—
		{ Fe.	1,096			13	2	—	—	—	—
Tyringham, . .	650	{ Ma.	306	2.00	13	8	3	—	1	1	—
		{ Fe.	344			5	1	—	—	—	—
Washington, .	859	{ Ma.	438	.98	8	5	1	—	1	—	—
		{ Fe.	421			3	—	—	—	—	—
W. Stockbridge,	1,620	{ Ma.	842	2.41	39	21	4	3	2	2	—
		{ Fe.	778			18	3	1	2	1	3
Williamstown, .	2,555	{ Ma.	1,220	2.04	52	30	6	1	—	—	—
		{ Fe.	1,335			22	1	2	—	1	—
Windsor, . . .	753	{ Ma.	391	.80	6	5	—	—	—	—	1
		{ Fe.	362			1	—	—	—	—	—
BRISTOL CO., .	89,395	{ Tot.	89,395	.	.	1,609	310	116	34	22	27
		{ Ma.	42,786	1.79	1,609	778	172	60	16	7	11
		{ Fe.	46,609			832	134	56	18	15	16
		{ U.	.	.	.	4	4	—	—	—	—
Acushnet, . .	1,251	{ Ma.	596	1.28	16	9	1	—	—	—	—
		{ Fe.	655			7	1	—	—	—	—
Attleborough, .	6,200	{ Ma.	2,954	2.15	133	69	14	3	2	1	2
		{ Fe.	3,246			64	9	5	3	1	3
Berkley, . . .	847	{ Ma.	396	1.42	12	8	1	1	—	—	—
		{ Fe.	451			4	1	—	—	—	—
Dartmouth, . .	3,435	{ Ma.	1,663	1.54	53	27	2	5	—	—	—
		{ Fe.	1,772			26	1	—	—	—	—
Dighton, . . .	1,813	{ Ma.	858	.99	18	9	1	2	1	—	—
		{ Fe.	955			8	—	2	1	—	—
		{ U.	.	.	.	1	1	—	—	—	—
Easton, . . .	3,076	{ Ma.	1,546	1.40	43	19	2	3	1	—	—
		{ Fe.	1,530			24	6	5	—	—	—
Fairhaven, . .	2,547	{ Ma.	1,213	1.58	39	22	3	—	—	—	—
		{ Fe.	1,334			17	1	—	—	—	—
Fall River, . .	17,481	{ Ma.	8,333	2.46	430	202	66	19	6	4	5
		{ Fe.	9,148			228	53	20	9	7	7
Freetown, . . .	1,485	{ Ma.	746	1.68	25	11	4	—	—	—	—
		{ Fe.	739			12	1	—	—	—	1
		{ U.	.	.	.	2	2	—	—	—	—
Mansfield, . .	2,130	{ Ma.	1,002	1.50	32	9	3	1	1	1	—
		{ Fe.	1,128			23	4	2	—	1	—

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 to 105	105 to 110	110 to 115	115 to 120	120 to 125	125 to 130	130 to 135	135 to 140	140 to 145	145 to 150	150 to 155	155 to 160	160 to 165	165 to 170	170 to 175	175 to 180	180 to 185	185 to 190	190 to 195	195 to 200	200 to 205	205 to 210	210 to 215	215 to 220	220 to 225	225 to 230	230 to 235	235 to 240	240 to 245	245 to 250	250 to 255	255 to 260	260 to 265	265 to 270	270 to 275	275 to 280	280 to 285	285 to 290	290 to 295	295 to 300	300 to 305	305 to 310	310 to 315	315 to 320	320 to 325	325 to 330	330 to 335	335 to 340	340 to 345	345 to 350	350 to 355	355 to 360	360 to 365	365 to 370	370 to 375	375 to 380	380 to 385	385 to 390	390 to 395	395 to 400	400 to 405	405 to 410	410 to 415	415 to 420	420 to 425	425 to 430	430 to 435	435 to 440	440 to 445	445 to 450	450 to 455	455 to 460	460 to 465	465 to 470	470 to 475	475 to 480	480 to 485	485 to 490	490 to 495	495 to 500	500 to 505	505 to 510	510 to 515	515 to 520	520 to 525	525 to 530	530 to 535	535 to 540	540 to 545	545 to 550	550 to 555	555 to 560	560 to 565	565 to 570	570 to 575	575 to 580	580 to 585	585 to 590	590 to 595	595 to 600	600 to 605	605 to 610	610 to 615	615 to 620	620 to 625	625 to 630	630 to 635	635 to 640	640 to 645	645 to 650	650 to 655	655 to 660	660 to 665	665 to 670	670 to 675	675 to 680	680 to 685	685 to 690	690 to 695	695 to 700	700 to 705	705 to 710	710 to 715	715 to 720	720 to 725	725 to 730	730 to 735	735 to 740	740 to 745	745 to 750	750 to 755	755 to 760	760 to 765	765 to 770	770 to 775	775 to 780	780 to 785	785 to 790	790 to 795	795 to 800	800 to 805	805 to 810	810 to 815	815 to 820	820 to 825	825 to 830	830 to 835	835 to 840	840 to 845	845 to 850	850 to 855	855 to 860	860 to 865	865 to 870	870 to 875	875 to 880	880 to 885	885 to 890	890 to 895	895 to 900	900 to 905	905 to 910	910 to 915	915 to 920	920 to 925	925 to 930	930 to 935	935 to 940	940 to 945	945 to 950	950 to 955	955 to 960	960 to 965	965 to 970	970 to 975	975 to 980	980 to 985	985 to 990	990 to 995	995 to 1000	1000 to 1005	1005 to 1010	1010 to 1015	1015 to 1020	1020 to 1025	1025 to 1030	1030 to 1035	1035 to 1040	1040 to 1045	1045 to 1050	1050 to 1055	1055 to 1060	1060 to 1065	1065 to 1070	1070 to 1075	1075 to 1080	1080 to 1085	1085 to 1090	1090 to 1095	1095 to 1100	1100 to 1105	1105 to 1110	1110 to 1115	1115 to 1120	1120 to 1125	1125 to 1130	1130 to 1135	1135 to 1140	1140 to 1145	1145 to 1150	1150 to 1155	1155 to 1160	1160 to 1165	1165 to 1170	1170 to 1175	1175 to 1180	1180 to 1185	1185 to 1190	1190 to 1195	1195 to 1200	1200 to 1205	1205 to 1210	1210 to 1215	1215 to 1220	1220 to 1225	1225 to 1230	1230 to 1235	1235 to 1240	1240 to 1245	1245 to 1250	1250 to 1255	1255 to 1260
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TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.			DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.		Per ct. to Pop.	Persons.	Sex.					
<i>Bristol—Con.</i> New Bedford, .	20,853	{ Ma. Fe. U.	9,664 11,189 .	1.62 . .	337 . .	158 178 1	39 30 1	14 12 —	4 1 1	— 2 —	— 4 —
Norton, .	1,709	{ Ma. Fe.	817 892	1.87	32	13 19	1 1	— 1	— 1	1 1	1 —
Raynham, .	1,868	{ Ma. Fe.	913 955	1.66	31	17 14	3 3	3 2	— —	— —	— —
Rehoboth, .	1,843	{ Ma. Fe.	883 960	1.84	34	21 13	— 1	— —	— —	— —	— —
Seekonk, .	928	{ Ma. Fe.	467 461	1.18	11	8 3	1 —	— —	— —	— —	— —
Somerset, .	1,789	{ Ma. Fe.	937 852	1.79	32	16 16	4 2	3 3	— —	— —	— —
Swanzey, .	1,336	{ Ma. Fe.	657 679	1.57	21	16 5	1 —	1 —	— —	— —	— —
Taunton, .	16,005	{ Ma. Fe.	7,753 8,252	1.70	272	121 151	26 19	5 2	1 2	— 3	3 1
Westport, .	2,799	{ Ma. Fe.	1,388 1,411	1.36	38	18 20	— 1	— 2	— 1	— —	— —
DUKES COUNTY,	4,200	{ Tot. Ma. Fe.	4,200 2,047 2,153	. 1.52	. 64	64 40 24	6 2 4	— — —	2 1 1	1 — 1	— — —
Chilmark, .	548	{ Ma. Fe.	273 275	1.09	6	4 2	— —	— —	— —	— —	— —
Edgartown, .	1,846	{ Ma. Fe.	876 970	1.41	26	13 13	2 3	— —	— —	— —	— —
Gosnold, .	108	{ Ma. Fe.	58 50	—	—	— —	— —	— —	— —	— —	— —
Tisbury, .	1,698	{ Ma. Fe.	840 858	1.89	32	23 9	— 1	— —	1 1	— 1	— —
ESSEX COUNTY,	171,034	{ Tot. Ma. Fe. U.	171,034 80,164 90,870 .	. 1.83 . .	. 3,136 .	3,136 1,450 1,682 4	670 375 292 3	222 112 110 —	97 44 53 —	72 42 29 1	44 21 23 —
Amesbury, .	4,181	{ Ma. Fe.	1,984 2,197	1.84	77	39 38	13 10	1 1	— 2	2 2	1 —
Andover, .	5,314	{ Ma. Fe.	2,516 2,798	1.90	101	38 63	10 5	1 5	3 1	1 3	— —
Beverly, .	5,942	{ Ma. Fe.	2,834 3,108	1.21	72	30 42	4 2	2 1	— —	1 2	— —
Boxford, .	868	{ Ma. Fe.	421 447	.46	4	3 1	1 —	— 1	— —	— —	— —

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Essex—Con.</i>										
Bradford, . .	1,566	{ Ma. 728 Fe. 838	1.02	16	6 10	— —	— 3	— —	— 1	— —
Danvers, . .	5,144	{ Ma. 2,515 Fe. 2,629	1.54	79	31 48	6 7	— 6	1 3	— —	— 1
Essex, . .	1,630	{ Ma. 839 Fe. 791	2.20	36	24 12	8 1	1 1	— —	— —	— —
Georgetown, .	1,926	{ Ma. 924 Fe. 1,002	1.09	21	11 10	2 1	1 —	— —	— —	— —
Gloucester, .	11,937	{ Ma. 6,003 Fe. 5,934	1.83	218	103 115	27 24	10 6	3 3	2 3	2 1
Groveland, .	1,619	{ Ma. 778 Fe. 841 U. .	2.04	33	19 13 1	3 — 1	2 — —	— — —	— 1 —	— 1 —
Hamilton, . .	799	{ Ma. 386 Fe. 413	1.00	8	1 7	— —	— —	— —	— —	— —
Haverhill, . .	10,740	{ Ma. 5,120 Fe. 5,620 U. .	1.70	183	87 95 1	13 8 —	10 4 —	4 5 —	— 2 —	2 2 —
Ipswich, . .	3,311	{ Ma. 1,539 Fe. 1,772	2.11	70	33 37	4 5	3 3	1 1	— 1	— 1
Lawrence, . .	21,698	{ Ma. 9,348 Fe. 12,350	2.36	513	234 279	82 74	24 26	11 12	10 5	3 5
Lynn, . .	20,747	{ Ma. 9,759 Fe. 10,988 U. .	1.90	395	177 217 1	54 41 1	15 12 —	2 5 —	1 1 —	6 1 —
Lynnfield, . .	725	{ Ma. 355 Fe. 370	1.24	9	3 6	2 —	— 2	— —	— —	— —
Manchester, .	1,643	{ Ma. 794 Fe. 849	1.95	32	12 20	— 4	1 2	— 1	— —	— —
Marblehead, .	7,308	{ Ma. 3,589 Fe. 3,719	2.12	155	66 89	28 24	2 3	2 4	5 2	— 1
Methuen, . .	2,576	{ Ma. 1,210 Fe. 1,366	1.98	51	27 24	2 2	4 1	— 1	— 1	— 1
Middleton, . .	922	{ Ma. 472 Fe. 450	2.39	22	10 12	2 1	— —	1 —	— —	— 1
Nahant, . .	313	{ Ma. 148 Fe. 165	1.60	5	4 1	2 —	— —	— —	— —	— —
Newbury, . .	1,362	{ Ma. 684 Fe. 678	1.47	20	8 12	2 1	— —	— 1	— —	— 1
Newburyport, .	12,976	{ Ma. 5,875 Fe. 7,101	1.39	180	91 89	21 9	7 6	6 —	4 —	1 —
North Andover, .	2,622	{ Ma. 1,319 Fe. 1,303	1.56	41	17 24	3 1	2 1	1 1	2 1	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to over.	Unknown.
-	-	1	-	-	1	-	-	-	-	-	1	-	-	1	1	1	-	-	-
-	1	2	1	1	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
1	3	3	3	-	-	2	-	2	1	3	1	3	-	1	-	2	-	-	-
2	-	3	5	2	-	-	3	3	1	1	2	-	3	2	3	-	1	-	-
-	-	-	-	2	1	-	-	1	2	-	1	2	1	1	1	3	-	-	-
1	-	-	1	1	-	1	-	-	1	1	1	-	1	-	1	1	-	-	-
2	-	-	-	-	-	2	-	-	-	-	-	2	-	-	1	-	1	-	-
2	-	-	-	-	1	-	1	-	-	-	1	1	1	-	1	-	1	-	-
7	2	3	1	5	4	4	2	-	2	6	3	6	4	6	3	-	-	-	1
3	6	4	2	5	7	3	3	4	2	6	4	7	7	6	3	2	-	-	4
4	1	-	2	1	-	-	1	-	1	-	1	1	1	-	1	-	-	-	-
2	-	1	1	2	-	-	-	-	1	-	1	1	-	1	-	-	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-
3	2	2	8	7	7	5	2	-	2	3	3	1	7	2	3	1	-	-	-
6	2	2	10	13	6	5	4	2	1	4	2	4	4	3	4	1	1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	3	-	-	1	1	-	2	2	3	2	2	1	3	2	-	1	-	-
1	-	4	-	1	1	4	2	2	-	1	1	-	2	4	1	2	-	-	-
9	5	8	11	17	7	3	8	9	8	4	3	5	3	2	1	1	-	-	-
16	10	20	16	17	10	17	5	8	5	8	4	7	2	3	5	2	-	1	1
5	3	4	8	16	7	2	7	9	4	8	6	8	7	2	1	-	1	-	1
10	3	13	11	25	15	12	7	3	5	7	8	8	11	6	4	4	3	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-
-	1	2	-	-	1	-	-	-	1	-	1	3	-	-	2	-	-	-	-
2	1	1	2	2	2	1	-	-	-	1	-	-	-	1	-	-	-	-	-
-	-	2	4	3	3	1	5	2	1	4	-	4	-	1	-	2	-	-	-
5	1	5	4	5	4	3	-	1	1	1	1	5	6	7	3	-	2	-	1
3	-	1	1	1	-	1	2	1	2	-	2	1	2	-	-	1	-	1	1
1	-	1	1	1	-	1	-	1	2	1	2	-	-	4	2	2	-	-	-
-	-	-	2	-	-	2	-	-	-	-	-	-	1	-	2	-	-	-	-
-	-	1	-	1	-	-	2	-	-	-	1	-	2	1	1	1	-	-	-
1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
-	1	-	-	1	-	1	-	-	-	1	1	1	3	-	1	-	-	-	-
5	2	1	4	3	4	2	-	3	3	2	5	5	2	3	3	1	3	-	1
1	1	5	6	3	5	1	5	3	1	4	4	6	6	10	7	4	1	-	1
2	-	-	-	-	1	-	-	-	2	1	1	-	1	-	1	-	-	-	-
2	2	-	1	1	1	-	1	2	1	1	2	-	2	-	1	1	1	-	1

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.			DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.		Per ct. to Pop.	Persons.	Sex.					
<i>Essex—Con.</i>											
Rockport, . .	3,367	{ Ma. Fe.	1,700 1,667	1.63	55	28 27	9 6	1 1	— 1	3 1	— 1
Rowley, . .	1,191	{ Ma. Fe.	598 593	1.68	20	12 8	2 1	— —	— —	— —	— —
Salem, . .	21,189	{ Ma. Fe. U.	9,288 11,901 .	1.95	414	193 220 1	47 38 1	18 11 —	6 5 —	6 3 —	2 4 —
Salisbury, . .	3,609	{ Ma. Fe.	1,665 1,944	1.69	61	27 34	4 7	1 1	1 —	2 —	— —
Saugus, . .	2,006	{ Ma. Fe.	995 1,011	1.89	38	19 19	3 5	1 2	1 1	1 —	1 2
South Danvers, .	6,051	{ Ma. Fe.	2,940 3,111	1.88	114	54 60	13 9	6 8	— 4	2 —	1 1
Swampscott, . .	1,535	{ Ma. Fe.	744 791	2.28	35	16 19	7 4	3 2	— 1	— —	— —
Topsfield, . .	1,212	{ Ma. Fe.	583 629	.99	12	5 7	— —	— —	— —	— —	— 1
Wenham, . .	918	{ Ma. Fe.	453 465	1.09	10	7 3	2 1	— —	— —	— —	— —
West Newbury, .	2,087	{ Ma. Fe.	1,058 1,029	1.72	36	15 21	1 1	1 1	1 1	— —	— —
FRANKLIN Co., .	31,340	{ Tot. Ma. Fe. U.	31,340 15,459 15,881 .	. 1.60 .	. 500 .	500 247 252 1	57 34 23 —	22 9 12 1	23 13 10 —	10 6 4 —	9 3 6 —
Ashfield, . .	1,221	{ Ma. Fe.	611 610	.66	8	5 3	— —	— —	— —	— —	— —
Bernardston, . .	902	{ Ma. Fe.	434 468	2.11	19	10 9	— 2	— —	1 —	— —	— —
Buckland, . .	1,922	{ Ma. Fe.	974 948	2.29	44	22 22	4 2	2 —	1 2	2 1	— 1
Charlemont, . .	994	{ Ma. Fe.	484 508	1.11	11	5 6	— —	— —	— —	— —	— —
Colrain, . .	1,726	{ Ma. Fe.	853 873	1.22	21	12 9	— —	— 1	2 —	— —	— —
Conway, . .	1,538	{ Ma. Fe.	748 790	2.08	32	18 14	1 1	1 1	2 —	— —	1 —
Deerfield, . .	3,038	{ Ma. Fe.	1,512 1,526	1.68	51	21 30	3 2	— 3	3 1	— 1	1 1
Erying, . .	576	{ Ma. Fe.	302 274	1.21	7	7 —	1 —	— —	— —	— —	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 & over.	Unknown.
-	1	1	2	1	-	-	-	1	1	-	-	3	-	2	2	-	-	-	1
-	1	-	1	2	2	1	1	-	-	1	-	2	1	4	-	-	-	-	1
2	-	1	-	-	-	-	3	-	-	-	1	-	-	-	-	1	-	1	1
-	1	1	1	-	-	-	1	-	-	-	-	1	-	-	-	1	-	-	1
8	3	4	7	7	7	9	6	7	6	6	13	12	7	7	4	6	-	-	-
9	6	5	9	9	10	15	8	5	3	12	10	9	12	13	11	7	6	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	2	-	2	1	2	1	2	2	1	2	2	-	2	-	-	-	-
2	1	-	3	3	2	-	-	-	3	-	2	2	1	4	-	2	1	-	-
-	-	1	1	2	3	-	-	-	-	2	-	-	2	1	-	-	-	-	-
-	-	-	1	1	-	1	-	-	-	-	-	-	2	1	-	2	1	-	-
1	2	2	1	3	1	1	5	4	1	1	4	2	3	-	-	1	-	-	-
4	3	4	.1	4	-	1	4	3	1	3	1	2	2	1	2	2	-	-	-
-	-	-	1	-	-	1	-	1	1	-	-	-	1	-	-	-	-	-	-
-	-	3	2	-	2	-	2	-	1	1	-	-	-	-	1	1	-	-	-
2	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	2	1	2	-	1	-	-	-	-	-
-	-	-	-	1	1	-	1	-	-	-	-	2	-	-	-	-	-	-	-
-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	2	-	1	-	-	-	-	-	-	1	-	2	1	2	2	-	-	-
-	1	1	-	1	2	-	3	1	1	-	1	1	1	1	1	2	1	-	-
23	18	12	23	30	19	16	19	18	12	28	22	32	34	26	19	14	9	2	3
12	10	4	9	11	9	6	7	10	7	14	16	10	19	15	7	9	5	1	1
11	8	8	14	19	10	10	12	8	5	14	6	22	15	11	12	5	4	1	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	-	-	1	-	-	-	1	-	-	-	-	-	1	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	-
-	-	-	1	1	-	1	-	-	1	1	1	1	2	-	2	-	1	-	-
4	1	-	1	-	1	2	-	1	-	-	-	-	2	-	-	-	-	-	-
2	2	1	1	1	1	-	1	1	-	1	2	1	1	1	1	-	1	-	-
-	-	-	-	-	-	-	1	-	1	1	-	1	1	-	1	-	-	-	-
-	-	-	1	-	1	1	-	-	1	-	-	-	2	1	-	-	-	-	-
2	-	1	1	-	-	-	1	1	-	-	-	-	1	1	-	-	-	-	-
1	1	-	-	2	-	1	-	-	1	1	2	1	2	-	2	1	-	-	-
-	1	1	-	4	-	1	-	-	-	-	-	1	-	2	-	-	-	-	-
3	2	1	3	3	1	3	1	2	1	-	2	1	1	-	1	1	1	-	-
1	-	-	-	-	2	-	-	1	-	2	-	-	-	-	-	-	-	-	-

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Franklin—Con.</i>										
Gill, . . .	685	{ Ma. 308 Fe. 327	1.26	8	5 3	1 —	— 1	— —	— —	— —
Greenfield, . .	3,211	{ Ma. 1,536 Fe. 1,675	1.90	61	29 32	5 5	4 1	1 1	1 —	— —
Hawley, . . .	687	{ Ma. 363 Fe. 324	1.31	9	2 7	— —	— —	— —	— —	— —
Heath, . . .	642	{ Ma. 312 Fe. 330	.47	3	2 1	— —	— —	— —	— —	— —
Leverett, . . .	914	{ Ma. 451 Fe. 463	2.52	23	12 11	2 3	— —	1 —	— —	— —
Leyden, . . .	592	{ Ma. 293 Fe. 299	.51	3	3 —	— —	— —	— —	— —	— —
Monroe, . . .	191	{ Ma. 93 Fe. 98	1.05	2	1 1	— —	— —	— —	— —	— —
Montague, . .	1,574	{ Ma. 770 Fe. 804	1.72	27	18 9	1 1	2 —	— 1	— —	— —
New Salem, .	1,116	{ Ma. 533 Fe. 583	.99	11	2 9	— —	— —	— 1	— —	— —
Northfield, . .	1,660	{ Ma. 796 Fe. 864	1.14	19	5 14	— 1	— 1	— —	— 1	— —
Orange, . . .	1,909	{ Ma. 952 Fe. 957 U. .	1.57	30	18 11 1	5 — —	— 1 —	1 — —	1 — —	— 1 —
Rowe, . . .	563	{ Ma. 285 Fe. 278	1.42	8	4 4	— —	— —	— —	— —	— 2
Shelburne, . .	1,564	{ Ma. 753 Fe. 811	1.98	31	14 17	3 1	— 2	— 4	— 1	1 1
Shutesbury, . .	788	{ Ma. 387 Fe. 401	1.90	15	8 7	3 —	— —	1 —	— —	— —
Sunderland, . .	861	{ Ma. 438 Fe. 423	1.83	16	8 8	2 —	— —	— —	1 —	— —
Warwick, . . .	901	{ Ma. 436 Fe. 465	1.22	11	3 8	— —	— 1	— —	— —	— —
Wendell, . . .	603	{ Ma. 290 Fe. 313	1.16	7	4 3	— —	— —	— —	— —	— —
Whately, . . .	1,012	{ Ma. 538 Fe. 474	2.27	23	9 14	3 5	— —	— —	1 —	— —
HAMPDEN Co., .	64,570	{ Tot. 64,570 Ma. 30,566 Fe. 34,004 U. .	. 1.90 . .	. 1,228 . .	1,228 602 622 4	244 131 110 3	94 47 46 1	53 20 33 —	27 14 13 —	22 10 12 —
Agawam, . . .	1,664	{ Ma. 795 Fe. 869	1.02	17	6 11	1 1	— 1	— —	— —	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to over	Unknown.
-	-	-	-	1	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-
1	1	-	1	2	2	-	1	1	2	2	1	1	-	3	-	-	-	-	-
1	1	1	3	5	1	-	2	1	1	2	1	3	1	1	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-
-	-	-	-	1	-	-	-	-	-	2	-	1	-	1	1	-	1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-
-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-
2	1	1	-	-	-	-	-	1	-	1	-	-	1	2	-	-	-	-	-
1	-	1	-	-	1	2	-	-	-	-	-	1	1	-	-	-	1	-	-
-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
-	2	-	1	-	1	-	-	1	-	-	2	1	4	1	-	-	1	-	1
-	-	-	1	1	-	-	-	1	-	1	-	1	-	1	-	1	-	-	-
-	-	-	-	-	1	-	1	-	1	-	-	1	-	1	-	1	-	-	1
-	-	-	1	-	1	-	1	-	-	-	-	1	-	1	-	1	-	-	-
-	-	1	-	-	-	-	-	-	-	1	1	2	3	1	2	1	-	-	-
-	-	1	-	1	1	-	1	-	1	3	1	1	1	1	-	1	-	-	-
-	-	-	-	-	1	-	-	2	-	-	-	3	-	-	-	-	-	-	-
-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	1	-	-	-	1	-	1	-	-	-	-	-	1	-	-	-
-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	-	-	-	1	-	-	-	-	-	4	-	1	1	-	1	-	-	-
1	-	-	-	-	3	2	-	-	-	-	-	-	-	-	-	1	-	-	1
-	1	-	1	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	-
1	1	-	-	-	-	-	-	-	-	2	-	1	1	1	-	-	-	-	-
-	-	-	-	-	1	-	-	-	-	1	-	-	-	1	-	2	-	-	-
-	-	-	-	-	1	-	3	-	-	-	-	1	2	-	-	-	-	-	-
-	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	2	-	-	-	1	-	-	-	-	1	1	1	-	1	-	-
-	1	-	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-
-	-	1	-	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	1	1	-	-	-	1	-	1	1	1	1	-	1	-	-	-	-
-	-	-	1	1	-	1	2	-	-	1	1	1	-	-	1	-	-	-	-
45	27	55	78	61	62	47	31	31	41	29	41	59	71	43	29	17	6	2	8
21	17	19	40	31	30	19	15	18	15	16	22	25	37	26	12	10	2	-	5
24	10	26	33	30	32	28	16	13	26	13	19	34	34	22	17	7	4	2	3
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	1	-	-	-	-	-	-	-	-	-	2	1	1	-	-	-	-
-	-	-	1	-	-	-	1	-	1	-	-	1	-	3	-	1	-	-	-

TABLE VII.—Continued.

					DEATHS.		Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
					Persons.	Sex.					
Hampden—Con.											
Blandford, .	1,087	{ Ma. 543 Fe. 545	1-20	13	11	2	1	-	-	1	-
Brimfield, .	1,316	{ Ma. 641 Fe. 675	1-44	19	10	9	2	-	-	-	-
Chester, .	1,266	{ Ma. 624 Fe. 642	1-08	13	9	4	2	1	-	1	-
Chicopee, .	7,577	{ Ma. 3,516 Fe. 4,061	2-42	183	89	94	26	7	4	1	3
Granville, .	1,367	{ Ma. 679 Fe. 688	1-17	16	7	9	1	-	-	1	-
Holland, .	368	{ Ma. 192 Fe. 176	1-03	6	1	5	-	-	-	-	2
Holyoke, .	5,648	{ Ma. 2,475 Fe. 3,173	1-56	33	33	50	10	4	2	1	3
Longmeadow, .	1,480	{ Ma. 690 Fe. 790	2-02	30	17	13	2	1	-	-	1
Ludlow, .	1,232	{ Ma. 592 Fe. 640	1-54	11	8	11	-	-	-	1	-
Monson, .	3,272	{ Ma. 1,584 Fe. 1,688	1-46	48	25	23	5	3	1	-	-
State Almshouse at Monson, .	-	{ Ma. - Fe. -	-	76	42	34	11	2	5	2	1
Montgomery, .	353	{ Ma. 171 Fe. 175	3-68	13	7	6	-	-	-	-	-
Palmer, .	3,080	{ Ma. 1,425 Fe. 1,655	1-11	52	23	29	9	-	-	1	-
Russell, .	613	{ Ma. 311 Fe. 307 U. .	1-04	12	8	4	1	-	-	-	-
Sonthevic, .	1,155	{ Ma. 575 Fe. 577 U. .	1-34	15	7	7	2	-	-	-	-
Springfield, .	22,035	{ Ma. 10,538 Fe. 11,497	1-75	385	187	198	43	20	5	2	1
Tolland, .	511	{ Ma. 261 Fe. 250 U. .	1-17	6	3	3	-	1	-	-	-
Wales, .	696	{ Ma. 349 Fe. 347	1-44	10	5	5	1	-	-	-	-
Westfield, .	5,634	{ Ma. 2,620 Fe. 3,014	1-11	127	61	66	7	1	1	1	1
W. Springfield, .	2,100	{ Ma. 999 Fe. 1,101	2-29	43	21	22	11	2	2	1	-

TABLE VII.—Continued.

Hampden—Con. Wilbraham, .	2,111	{ Ma. 977 Fe. 1,134	1.51	32	10 22	1 1	- -	- -	1 -	- -
HAMPSHIRE CO.,	39,269	{ Tot. 39,269 Ma. 18,555 Fe. 20,714 U. .	1.69	685	685 316 346 3	90 91 90 2	27 12 15 -	30 12 17 -	15 7 11 -	9 3 6 -
Amherst, . .	3,415	{ Ma. 1,585 Fe. 1,830	1.23	42	22 20	4 1	1 2	2 1	- 1	- -
Belchertown, .	2,636	{ Ma. 1,299 Fe. 1,337	1.17	31	16 15	- 1	- -	- -	1 -	- -
Chesterfield, .	801	{ Ma. 411 Fe. 390	1.50	12	6 6	- 2	- -	1 1	- -	- -
Cummington, .	980	{ Ma. 466 Fe. 514	.82	8	11 6	11 1	- -	- -	- -	- -
Easthampton, .	2,869	{ Ma. 1,263 Fe. 1,601	2.47	71	38 33	10 8	4 -	- -	1 1	- -
Enfield, . .	997	{ Ma. 453 Fe. 534	1.40	14	6 6	1 1	- -	- -	- -	- -
Goshen, . .	411	{ Ma. 204 Fe. 207	1.70	7	4 3	- -	- -	- -	- -	- -
Granby, . .	908	{ Ma. 463 Fe. 445	.99	9	5 4	- -	- -	1 -	- -	- -
Greenwich, .	648	{ Ma. 304 Fe. 344	.77	5	3 2	- -	- -	- -	- -	- -
Hadley, . .	2,246	{ Ma. 1,116 Fe. 1,130	1.20	27	12 15	2 1	1 -	2 -	- -	1 1
Hatfield, . .	1,405	{ Ma. 723 Fe. 682	2.35	33	16 17	2 1	- 4	3 1	- 1	1 1
Huntington, .	1,163	{ Ma. 542 Fe. 621	1.98	23	11 14	1 -	1 -	1 -	- -	- -
Middlefield, .	727	{ Ma. 370 Fe. 357	1.79	13	5 3	- -	- -	1 -	- -	- -
Northampton, .	7,925	{ Ma. 3,556 Fe. 4,369	2.09	166	73 93	19 11	3 6	3 3	9 1	1 2
Pelham, . .	737	{ Ma. 369 Fe. 368	.63	5	4 1	- -	- -	- -	- -	- -
Plainfield, . .	579	{ Ma. 289 Fe. 290	1.38	8	3 5	- -	- -	- -	1 -	- -
Prescott, . .	596	{ Ma. 290 Fe. 306	1.34	8	11 4	- -	- -	- -	- -	- -
South Hadley, .	2,099	{ Ma. 946 Fe. 1,153 U. .	1.43	31	12 16 3	1 1 2	- 1 -	- 1 -	- 1 -	- 1 -

1866.]

DEATHS.

iii

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 & over	Unknown
-	-	-	1	-	1	-	1	-	-	-	-	1	2	2	-	-	-	-	-
3	-	1	2	2	-	-	1	-	1	1	-	3	3	2	1	1	-	-	-
23	21	27	31	31	34	27	21	25	23	20	26	41	37	43	23	10	7	-	10
15	8	12	11	14	11	10	8	13	13	8	15	21	22	18	11	4	3	-	3
13	13	15	20	17	23	17	13	12	10	12	11	20	15	25	12	6	4	-	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
1	-	1	1	2	-	-	1	-	1	2	1	1	2	1	1	-	-	-	-
1	-	-	-	2	1	-	1	1	-	-	1	2	1	2	2	-	-	-	-
-	-	3	3	-	1	2	-	-	-	1	1	4	3	-	-	1	1	-	-
-	-	-	1	-	-	1	-	-	1	-	2	-	-	1	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
-	-	-	1	1	-	-	-	-	-	-	-	1	-	1	-	1	-	-	-
-	1	1	3	2	1	2	-	1	1	2	1	2	-	-	-	-	1	-	-
3	2	1	-	1	3	3	-	1	1	1	-	-	1	2	2	1	1	-	1
-	-	-	2	-	1	-	-	1	-	1	1	-	2	2	-	-	-	-	-
-	-	-	-	1	1	-	-	-	-	-	-	1	1	1	1	-	-	-	-
-	-	-	-	-	1	-	-	1	-	-	-	1	-	1	-	1	1	-	-
-	1	-	-	-	-	-	-	-	-	-	-	2	-	1	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
-	1	1	-	2	-	1	1	-	-	1	-	-	1	2	-	-	-	-	1
-	1	-	-	-	1	1	1	-	-	-	1	-	3	1	1	1	-	-	-
-	3	2	1	-	1	1	-	-	1	-	-	1	1	2	1	-	-	-	-
1	1	1	1	-	-	-	-	-	-	-	-	-	1	-	1	-	-	-	1
3	1	2	4	3	5	1	2	5	2	2	3	4	2	3	1	2	-	-	2
3	2	4	7	6	7	7	7	3	3	3	4	5	1	6	-	-	-	-	-
1	-	1	-	-	-	-	-	-	-	-	2	-	-	-	1	-	-	-	-
-	-	-	-	1	-	-	-	1	-	-	1	-	2	-	-	-	-	-	-
-	1	-	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-	1	2	-	-	-	-	-	2	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-
-	-	-	1	-	1	-	-	3	3	-	-	-	2	1	-	-	-	-	1
1	-	1	2	-	-	1	1	1	1	2	1	-	-	-	-	1	-	-	1

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Hampshire—Con.</i>										
Southampton, .	1,216	{ Ma. 610 Fe. 606	1.40	17	7 10	1 —	— —	1 1	— —	— —
Ware, . . .	3,374	{ Ma. 1,567 Fe. 1,807	2.19	74	38 36	11 4	2 1	— 3	1 —	2 1
Westhampton, .	636	{ Ma. 307 Fe. 329	2.04	13	5 8	1 —	— —	— —	— 1	— —
Williamsburg, .	1,976	{ Ma. 963 Fe. 1,013	1.82	36	18 18	1 3	— 1	1 3	1 2	— 1
Worthington, .	925	{ Ma. 444 Fe. 481	1.30	12	6 6	— 1	— —	1 —	— —	— —
MIDDLESEX Co.,	220,384	{ Tot. 220,384 Ma. 104,115 Fe. 116,269 U. .	. 1.98 .	. 4,362 .	4,362 2,104 2,254 4	836 464 368 4	301 156 145 —	147 82 65 —	88 45 43 —	51 23 28 —
Acton, . . .	1,660	{ Ma. 803 Fe. 857	1.33	22	11 11	3 1	1 —	— —	— —	— —
Arlington,* .	2,760	{ Ma. 1,309 Fe. 1,451	2.03	56	30 26	6 2	5 1	2 —	— —	— —
Ashby, . . .	1,030	{ Ma. 515 Fe. 565	1.67	18	9 9	— 1	— —	— —	1 —	— —
Ashland, . .	1,702	{ Ma. 856 Fe. 846	1.35	23	13 10	5 1	1 —	1 —	— 1	— —
Bedford, . .	820	{ Ma. 393 Fe. 427	1.71	14	6 8	3 —	— —	1 —	— 1	— —
Belmont, . .	1,279	{ Ma. 665 Fe. 614	1.18	15	5 10	— 6	1 —	— —	— —	1 —
Billerica, . .	1,808	{ Ma. 864 Fe. 944	1.94	35	20 15	4 1	— —	— —	— —	— 1
Boxborough, .	454	{ Ma. 242 Fe. 212	.88	4	— 4	— —	— —	— —	— —	— —
Brighton, . .	3,854	{ Ma. 1,868 Fe. 1,986	1.56	60	31 29	3 5	3 2	1 —	— —	— —
Burlington, .	594	{ Ma. 323 Fe. 271	1.52	9	6 3	1 —	1 —	— —	— —	— —
Cambridge, .	29,112	{ Ma. 13,614 Fe. 15,498 U. .	1.88 .	546 .	257 287 2	65 58 2	31 28 —	11 9 —	4 4 —	3 3 —
Carlisle, . .	642	{ Ma. 305 Fe. 337	1.40	9	5 4	2 —	— —	— —	— —	— —
Charlestown, .	26,399	{ Ma. 12,738 Fe. 13,661	2.22	585	294 291	89 50	30 26	9 12	8 6	6 6

* Name changed from West Cambridge, April 13, 1867.

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	3 to 3																	10 to 15	15 & over	Unknown
-	-	-	-	-	-																	1	1	1
-	1	-	1	-	-																	1	1	1
2	4	3	-	-	-																	1	1	1
2	1	1	2	3	-																	1	1	1
-	-	-	-	-	-																	1	1	1
-	-	-	-	1	-																	1	1	1
6	-	-	-	-	-																	1	1	1
-	-	1	-	1	-																	1	1	1
-	-	1	-	-	1																	1	1	1
176	95	164	261	228	210	207	185	167	160	158	162	203	172	150	129	111	40	11	30					
87	46	86	194	107	93	82	54	80	80	79	89	103	79	49	54	32	14	4	13					
20	49	98	137	121	117	126	111	87	80	79	93	100	93	82	75	49	25	7	17					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
-	-	1	-	-	-	-	1	-	1	-	-	1	-	2	1	-	-	-	-					
1	-	-	-	-	2	-	1	-	1	-	-	-	2	2	-	-	1	-	-					
2	-	-	-	-	-	2	2	1	1	1	3	2	1	1	-	1	-	-	-					
1	-	1	1	2	3	1	1	2	2	4	1	2	-	-	1	1	-	-	-					
-	1	-	-	-	-	-	-	1	1	-	-	-	4	-	-	1	-	-	-					
-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	3	1	-	-	-					
-	-	-	2	1	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-					
-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-					
-	1	-	-	1	-	-	-	-	-	1	-	-	1	-	1	1	1	1	-					
1	-	-	1	1	1	1	-	1	-	-	-	-	-	-	-	-	1	-	-					
2	-	-	-	1	2	1	-	1	-	-	-	1	-	-	1	1	1	1	1					
-	-	-	1	3	-	2	1	1	-	-	1	3	-	4	1	-	-	-	-					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1	-	-	-	-	-	-	-	-	-	-	-	1	-	1	-	1	-	-	-					
-	1	2	5	1	2	1	-	1	-	1	1	2	2	2	1	-	-	-	-					
2	1	2	1	-	1	2	2	1	1	1	3	2	1	1	1	-	-	-	-					
-	-	-	-	-	1	-	-	-	-	1	-	-	1	-	-	1	-	-	-					
-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-					
11	6	7	13	10	9	12	8	10	10	6	12	6	6	9	4	2	2	1	1					
11	6	7	16	10	15	15	9	13	11	15	14	10	6	10	5	6	1	1	1					
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-					
1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	-	-					
-	-	-	1	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-					
10	9	5	14	13	14	14	7	10	11	11	10	9	2	4	4	1	-	1	3					
3	3	11	20	10	15	11	12	11	11	7	5	14	8	11	6	3	3	1	4					

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Middlesex—Con.</i>										
Chelmsford, .	2,291	{ Ma. 1,060 Fe. 1,231	1.88	43	17 26	2 4	— —	2 1	3 1	— —
Concord, .	2,232	{ Ma. 1,089 Fe. 1,143	2.06	46	25 21	2 —	1 1	2 —	1 —	1 —
Dracut, .	1,905	{ Ma. 951 Fe. 954 U. .	2.41	46	17 28 1	3 3 1	— 1 —	1 2 —	— — —	— 2 —
Dunstable, .	533	{ Ma. 270 Fe. 263	2.06	11	5 6	— —	1 —	— —	— —	— —
Framingham, .	4,665	{ Ma. 2,112 Fe. 2,553	1.26	59	32 27	4 3	1 2	1 1	1 1	— —
Groton, .	3,176	{ Ma. 1,529 Fe. 1,647	1.67	53	27 26	3 3	— —	1 —	— —	1 —
Holliston, .	3,125	{ Ma. 1,508 Fe. 1,617	1.31	41	16 25	5 2	1 1	— —	— 1	— —
Hopkinton, .	4,132	{ Ma. 2,077 Fe. 2,055	1.60	66	33 33	2 4	2 3	1 3	— —	— —
Hudson,* .	—	{ Ma. — Fe. —	—	22	11 11	1 1	1 —	— —	1 —	— —
Lexington, .	2,220	{ Ma. 1,056 Fe. 1,164	1.40	31	15 16	— 2	1 2	— —	— —	1 —
Lincoln, .	711	{ Ma. 352 Fe. 359	.84	6	3 3	— —	— —	— —	— —	— —
Littleton, .	967	{ Ma. 491 Fe. 476	1.24	12	5 7	1 —	— —	— —	— 1	— —
Lowell, .	30,990	{ Ma. 13,597 Fe. 17,393 U. .	2.42	749	352 396 1	65 51 1	34 35 —	18 18 —	18 12 —	4 6 —
Malden, .	6,840	{ Ma. 3,237 Fe. 3,603	1.58	108	52 56	9 11	6 3	4 1	1 1	— 1
Marlborough, .	7,164	{ Ma. 3,492 Fe. 3,672	1.37	98	56 42	23 15	5 5	4 1	— —	— —
Medford, .	4,839	{ Ma. 2,234 Fe. 2,605	1.16	56	23 33	3 6	— 3	1 1	1 1	— —
Melrose, .	2,865	{ Ma. 1,340 Fe. 1,525	1.61	46	18 28	4 2	— 2	— —	— —	— —
Natick, .	5,208	{ Ma. 2,601 Fe. 2,607	1.84	96	48 48	13 12	1 1	1 1	— 1	— —
Newton, .	8,975	{ Ma. 4,997 Fe. 4,878	1.27	114	52 62	11 6	4 4	3 2	— 2	— —
North Reading, .	987	{ Ma. 488 Fe. 499	1.72	17	9 8	1 2	1 —	— —	— —	— —

* Incorporated March 19, 1866.

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	4 to 5																UNKNOWN.
10	15	20	25	30	35	40	4																
2	1	1	1	1	-	-	-	-	-	2	1	-	2	2	1	1	1	2	1	-	-	-	-
2	1	-	2	2	3	-	-	-	-	-	-	-	-	1	1	4	-	-	-	-	-	-	-
-	1	1	2	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	-	2	-	-	1	2	2	1	-	1	2	-	-	1	-	1	1	2	-	-
1	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	1	4	3	2	-	1	-	2	2	3	4	2	1	-	-	-	-	-	-	-	-	-
2	1	2	1	3	2	1	-	1	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-
-	1	-	1	4	2	-	-	2	1	2	1	-	2	1	-	-	-	-	-	-	-	-	-
-	-	1	1	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	1	1	2	3	-	1	-	1	-	-	-	-	1	-	-	1	-	-	-	-	-	-	-
4	1	-	2	5	1	1	1	2	1	1	-	1	1	-	1	4	1	1	2	1	2	1	-
2	1	1	1	1	-	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	-	1	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
-	3	-	-	1	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	1	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	1	-	1	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-
-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11	3	12	25	11	21	8	10	12	16	13	16	21	13	4	6	3	1	1	1	1	1	1	1
22	2	22	28	27	19	23	8	13	11	11	18	17	23	7	13	6	2	1	6	2	1	6	6
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	2	4	5	1	1	2	1	2	2	1	2	1	2	1	-	1	-	1	-	-	-	-	-
1	2	4	3	2	3	1	2	1	2	2	2	3	2	-	2	1	2	1	2	1	-	-	-
2	2	2	2	-	1	3	1	-	1	2	-	2	-	1	1	1	1	1	-	-	-	-	-
1	-	-	1	1	1	4	4	1	1	-	1	-	1	1	2	1	-	1	-	-	-	-	-
2	1	-	1	1	1	3	1	1	2	-	1	2	1	-	-	-	-	-	-	-	-	-	-
1	1	2	1	-	1	1	2	1	2	2	1	2	1	2	3	-	-	1	1	1	-	-	-
1	1	-	1	3	1	2	1	2	2	2	2	1	2	2	2	2	1	1	1	-	-	-	-
1	2	2	4	1	-	3	1	2	3	2	1	2	2	2	2	2	1	1	-	-	-	-	-
2	-	4	2	5	3	1	1	2	-	1	1	2	2	2	2	1	2	1	-	-	-	-	-
2	1	2	5	4	5	5	5	2	2	1	5	4	1	-	-	-	-	-	-	-	-	-	-
-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	1	-	-	-	-	1	-	-	-	-	-	1	1	-	1	1	-	-	-	-	-	-	-

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Middlesex—Con.</i>										
Pepperell, . .	1,709	{ Ma. 804 Fe. 905	1.93	33	15 18	— —	— 1	— 1	— —	— —
Reading, . .	2,436	{ Ma. 1,158 Fe. 1,278	1.68	41	23 18	3 3	1 1	— —	— 1	— —
Sherborn, . .	1,049	{ Ma. 510 Fe. 539	1.72	18	6 12	— 2	— —	— 1	— —	— —
Shirley, . .	1,217	{ Ma. 592 Fe. 625	2.14	26	6 20	1 —	— —	— —	1 —	— —
Somerville, .	9,353	{ Ma. 4,547 Fe. 4,806	2.42	226	110 116	28 29	12 11	3 2	— 2	1 1
South Reading, .	3,244	{ Ma. 1,494 Fe. 1,750	1.91	62	29 33	5 4	— —	2 —	— —	— 2
Stoneham, . .	3,298	{ Ma. 1,585 Fe. 1,713	1.76	58	27 31	9 6	2 —	2 1	— —	— —
Stow, . .	1,537	{ Ma. 744 Fe. 793	1.24	19	8 11	1 2	— 1	— —	— —	— 1
Sudbury, . .	1,703	{ Ma. 811 Fe. 892	1.41	24	12 12	2 —	1 —	— —	— —	— —
Tewksbury, .	1,801	{ Ma. 879 Fe. 922	.83	15	6 9	— 1	— —	— —	— —	— —
State Almshouse at Tewksbury,	—	{ Ma. — Fe. —	—	250	130 120	45 38	1 2	2 1	— —	— —
Townsend, . .	2,042	{ Ma. 1,003 Fe. 1,039	1.52	31	16 15	1 —	— 1	— —	1 —	— 1
• Tyngsborough, .	578	{ Ma. 281 Fe. 297	3.29	19	6 13	1 2	— 2	— —	— —	— —
Waltham, . .	6,896	{ Ma. 3,147 Fe. 3,749	2.41	166	87 79	15 17	2 2	7 3	4 4	3 2
Watertown, .	3,779	{ Ma. 1,754 Fe. 2,025	1.11	43	21 22	4 2	2 1	— —	— —	— —
Wayland, . .	1,187	{ Ma. 564 Fe. 573	1.49	17	8 9	1 —	— —	— —	— —	— —
Westford, . .	1,568	{ Ma. 760 Fe. 808	1.41	22	10 12	1 —	1 —	1 1	— —	— 1
Weston, . .	1,231	{ Ma. 615 Fe. 616	1.71	21	11 10	1 —	1 —	1 1	— —	— —
Wilmington, .	850	{ Ma. 394 Fe. 456	1.41	12	7 5	— 2	— —	— —	— —	— —
Winchester, .	1,968	{ Ma. 934 Fe. 1,034	1.58	31	14 17	2 1	— 1	— 1	— 1	2 —
Woburn, . .	6,999	{ Ma. 3,463 Fe. 3,536	1.60	112	49 63	11 7	1 2	— 1	— 2	— 1

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	1	5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	100 to 105	105 to 110	110 to 115	115 to 120	120 to 125	125 to 130	130 to 135	135 to 140	140 to 145	145 to 150	150 to 155	155 to 160	160 to 165	165 to 170	170 to 175	175 to 180	180 to 185	185 to 190	190 to 195	195 to 200	200 to 205	205 to 210	210 to 215	215 to 220	220 to 225	225 to 230	230 to 235	235 to 240	240 to 245	245 to 250	250 to 255	255 to 260	260 to 265	265 to 270	270 to 275	275 to 280	280 to 285	285 to 290	290 to 295	295 to 300	300 to 305	305 to 310	310 to 315	315 to 320	320 to 325	325 to 330	330 to 335	335 to 340	340 to 345	345 to 350	350 to 355	355 to 360	360 to 365	365 to 370	370 to 375	375 to 380	380 to 385	385 to 390	390 to 395	395 to 400	400 to 405	405 to 410	410 to 415	415 to 420	420 to 425	425 to 430	430 to 435	435 to 440	440 to 445	445 to 450	450 to 455	455 to 460	460 to 465	465 to 470	470 to 475	475 to 480	480 to 485	485 to 490	490 to 495	495 to 500	500 to 505	505 to 510	510 to 515	515 to 520	520 to 525	525 to 530	530 to 535	535 to 540	540 to 545	545 to 550	550 to 555	555 to 560	560 to 565	565 to 570	570 to 575	575 to 580	580 to 585	585 to 590	590 to 595	595 to 600	600 to 605	605 to 610	610 to 615	615 to 620	620 to 625	625 to 630	630 to 635	635 to 640	640 to 645	645 to 650	650 to 655	655 to 660	660 to 665	665 to 670	670 to 675	675 to 680	680 to 685	685 to 690	690 to 695	695 to 700	700 to 705	705 to 710	710 to 715	715 to 720	720 to 725	725 to 730	730 to 735	735 to 740	740 to 745	745 to 750	750 to 755	755 to 760	760 to 765	765 to 770	770 to 775	775 to 780	780 to 785	785 to 790	790 to 795	795 to 800	800 to 805	805 to 810	810 to 815	815 to 820	820 to 825	825 to 830	830 to 835	835 to 840	840 to 845	845 to 850	850 to 855	855 to 860	860 to 865	865 to 870	870 to 875	875 to 880	880 to 885	885 to 890	890 to 895	895 to 900	900 to 905	905 to 910	910 to 915	915 to 920	920 to 925	925 to 930	930 to 935	935 to 940	940 to 945	945 to 950	950 to 955	955 to 960	960 to 965	965 to 970	970 to 975	975 to 980	980 to 985	985 to 990	990 to 995	995 to 1000	1000 to 1005	1005 to 1010	1010 to 1015	1015 to 1020	1020 to 1025	1025 to 1030	1030 to 1035	1035 to 1040	1040 to 1045	1045 to 1050	1050 to 1055	1055 to 1060	1060 to 1065	1065 to 1070	1070 to 1075	1075 to 1080	1080 to 1085	1085 to 1090	1090 to 1095	1095 to 1100	1100 to 1105	1105 to 1110	1110 to 1115	1115 to 1120	1120 to 1125	1125 to 1130	1130 to 1135	1135 to 1140	1140 to 1145	1145 to 1150	1150 to 1155	1155 to 1160	1160 to 1165	1165 to 1170	1170 to 1175	1175 to 1180	1180 to 1185	1185 to 1190	1190 to 1195	1195 to 1200	1200 to 1205	1205 to 1210	1210 to 1215	1215 to 1220	1220 to 1225	1225 to 1230	1230 to 1235	
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TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
NANTUCKET Co.,	4,748	{ Tot. 4,748 Ma. 2,158 Fe. 2,590	. 1.90	. 90	90 47 43	6 4 2	1 1 —	— — —	1 1 —	— — —
NORFOLK Co., .	116,306	{ Tot. 116,306 Ma. 54,796 Fe. 61,510 U. .	. 1.64 .	. 1,913 .	1,913 937 973 3	394 201 191 2	109 53 56 —	56 22 34 —	40 17 22 1	20 12 8 —
Bellingham, .	1,240	{ Ma. 599 Fe. 641 U. .	1.37 .	17 .	10 5 2	1 — 1	1 — —	— — —	— — 1	— — —
Braintree, .	3,725	{ Ma. 1,788 Fe. 1,937	1.50	56	21 35	4 4	1 4	— 1	— 1	— 1
Brookline, .	5,262	{ Ma. 2,318 Fe. 2,944	1.52	80	47 33	14 17	5 1	1 —	— 1	— —
Canton, .	3,318	{ Ma. 1,552 Fe. 1,766	1.21	40	23 17	5 2	— —	— —	1 —	1 —
Cohasset, .	2,048	{ Ma. 992 Fe. 1,056	1.37	28	12 16	1 7	— —	— 1	— 1	1 —
Dedham, .	7,195	{ Ma. 3,394 Fe. 3,801	1.61	116	64 52	12 10	3 4	1 4	— 1	1 —
Dorchester, .	10,717	{ Ma. 4,797 Fe. 5,920	1.60	171	79 92	19 16	5 4	3 —	— 4	1 1
Dover, .	618	{ Ma. 291 Fe. 325	.81	5	1 4	— 1	— —	— —	— —	— —
Foxborough, .	2,778	{ Ma. 1,244 Fe. 1,534	1.37	38	17 21	6 1	— 1	— 1	— —	— 1
Franklin, .	2,510	{ Ma. 1,120 Fe. 1,390	1.75	44	16 28	1 1	2 2	1 1	— —	— —
Medfield, .	1,012	{ Ma. 460 Fe. 552	1.68	17	7 10	1 2	— —	— —	— —	— —
Medway, .	3,219	{ Ma. 1,520 Fe. 1,699	1.55	50	22 28	— 6	1 —	— 1	2 —	— —
Milton, .	2,770	{ Ma. 1,256 Fe. 1,514	1.37	38	18 20	4 —	— 2	— —	— 1	1 —
Needham, .	2,793	{ Ma. 1,375 Fe. 1,418	1.90	53	29 24	4 5	1 —	1 —	— —	— —
Quincy, .	6,718	{ Ma. 3,307 Fe. 3,411	1.79	120	56 64	11 4	2 1	2 —	1 1	1 1
Randolph, .	5,734	{ Ma. 2,852 Fe. 2,882	1.31	75	44 31	8 6	4 2	2 1	— —	— —
Roxbury, .	28,426	{ Ma. 13,340 Fe. 15,086	2.00	569	276 293	72 72	23 25	6 15	8 11	5 2

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 & over.	Unknown.
4 3 1	- - -	- - -	9 3 6	3 - 3	3 2 1	1 1 -	- - -	2 1 1	4 3 1	5 4 1	5 2 3	11 6 5	6 3 3	6 5 1	16 6 10	4 1 3	2 1 1	- - -	- - -
68 54 44	43 19 21	67 33 29	87 40 47	100 52 48	89 45 44	82 33 44	77 34 43	69 24 35	60 25 25	76 40 36	57 31 26	88 35 53	89 43 46	75 33 37	57 25 32	36 10 26	17 2 15	4 3 1	23 10 7
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	1	-	-	1	-	1	-	-	1	-	2	-	1	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1	-	-	2	3	3	-	1	1	-	2	1	-	1	-	1	-	-	-	-
2	-	-	-	1	-	4	3	-	1	4	1	2	1	-	3	1	1	-	-
5	1	2	1	3	2	1	4	1	1	1	-	2	1	2	-	-	-	-	-
2	-	1	-	-	2	3	2	-	-	-	-	2	2	-	-	-	-	-	-
1	1	1	-	-	1	-	-	-	-	3	2	1	3	1	1	1	-	-	-
2	2	1	2	1	1	-	1	-	-	-	1	-	1	2	-	1	-	-	-
2	-	-	1	1	-	1	-	-	1	-	-	-	2	2	-	-	-	-	-
1	-	-	2	-	-	2	-	-	1	-	-	1	-	-	-	-	-	-	-
1	1	3	6	8	3	-	3	1	3	3	2	2	1	5	3	2	-	-	-
1	1	2	2	3	1	3	3	2	1	-	2	5	3	1	-	1	1	-	1
5	1	3	3	1	4	3	2	2	3	4	3	2	3	3	3	-	-	-	1
3	5	4	2	9	6	4	4	5	3	2	3	4	3	1	5	3	1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-
-	-	2	1	1	1	-	1	-	2	1	-	-	1	1	-	-	-	-	-
-	-	-	1	2	-	-	4	2	-	-	1	3	1	2	-	1	-	-	-
1	-	-	4	1	-	1	-	-	-	1	-	3	2	1	1	-	-	1	-
-	-	-	-	2	-	1	4	1	-	-	-	-	1	5	1	2	-	1	-
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	2	1	-	-	-	-	-	1	-	-	1	-	1	1	1	-	-
-	-	1	3	3	-	1	-	-	1	-	3	1	1	-	2	1	-	-	1
2	1	2	2	2	-	-	-	-	1	3	2	1	-	-	1	1	-	-	-
2	2	2	-	1	-	-	2	-	-	-	-	-	1	-	-	-	-	-	-
1	-	1	1	-	2	1	1	1	1	1	-	2	1	1	2	-	1	-	-
3	2	1	2	1	1	2	1	-	3	1	1	-	1	2	-	1	-	-	1
1	-	1	3	1	2	2	-	2	-	1	-	1	2	1	-	-	1	-	1
4	-	1	2	1	4	5	3	3	2	3	3	2	1	2	1	1	-	-	-
3	4	2	6	5	3	5	1	3	3	3	2	3	5	3	2	4	-	-	-
5	1	1	-	3	2	1	-	5	2	3	1	2	1	3	-	-	-	-	-
2	-	3	1	1	1	3	-	2	-	1	1	3	1	1	1	-	1	-	-
13 14	7 5	7 6	9 7	16 13	12 15	10 9	7 11	10 7	10 7	9 12	6 5	11 12	10 15	6 10	5 9	1 6	- 3	1 -	10 8

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
Norfolk—Con. Sharon, . . .	1,393	{ Ma. 667 Fe. 726	1.44	20	12 8	1 —	— —	1 —	— 1	— —
Stoughton, . .	4,855	{ Ma. 2,431 Fe. 2,424	1.54	75	36 39	5 5	1 2	1 2	— —	1 —
Walpole, . . .	2,018	{ Ma. 954 Fe. 1,064	1.98	40	23 17	3 5	1 —	1 1	— —	— —
West Roxbury, .	6,912	{ Ma. 3,100 Fe. 3,812 U. .	1.36	94	35 58 1	6 9 1	2 4 —	1 — —	1 — —	— 1 —
Weymouth, . .	7,975	{ Ma. 3,969 Fe. 4,006	1.63	130	68 62	18 15	1 2	1 4	3 —	— 1
Wrentham, . .	3,072	{ Ma. 1,470 Fe. 1,602	1.20	87	21 16	5 1	— 2	— 2	1 —	— —
PLYMOUTH Co.,	63,107	{ Tot. 63,107 Ma. 30,772 Fe. 32,335	. 1.02	. 1,023	1,023 516 507	158 89 69	42 29 13	19 11 8	11 5 6	11 3 3
Abington, . . .	8,576	{ Ma. 4,263 Fe. 4,313	1.32	116	61 55	12 15	7 3	1 1	1 2	— 1
Bridgewater, .	4,196	{ Ma. 2,048 Fe. 2,148	1.05	44	30 14	3 1	1 —	— 2	— —	— —
State Almshouse at Bridgewater,	—	{ Ma. — Fe. —	—	108	51 57	8 15	4 3	1 1	— 1	1 —
Carver, . . .	1,059	{ Ma. 541 Fe. 518	1.13	12	5 7	1 2	— 1	— —	— —	— —
Duxbury, . . .	2,384	{ Ma. 1,168 Fe. 1,216	1.16	33	13 20	2 1	1 —	— —	— 1	— 1
E. Bridgewater, .	2,976	{ Ma. 1,470 Fe. 1,506	1.55	46	29 17	3 5	— —	1 —	— —	— —
Halifax, . . .	722	{ Ma. 349 Fe. 373	1.39	10	6 4	— 1	— —	— —	— —	— —
Hanover, . . .	1,545	{ Ma. 737 Fe. 808	2.14	33	13 15	6 —	2 —	— —	1 —	— —
Hanson, . . .	1,196	{ Ma. 591 Fe. 605	1.42	17	7 10	— 1	— —	— —	— —	— —
Hingham, . . .	4,176	{ Ma. 1,932 Fe. 2,244	1.20	50	18 32	1 5	1 —	— —	— —	— 1
Hull, . . .	260	{ Ma. 127 Fe. 133	1.54	4	3 1	— —	1 —	— —	— —	— —
Kingston, . . .	1,626	{ Ma. 751 Fe. 875	1.41	23	7 16	— 3	— 1	— —	1 —	— —
Lakeville, . .	1,110	{ Ma. 569 Fe. 541	1.35	15	12 3	1 —	1 —	— —	— —	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 & over.	Unknown.
-	-	1	1	-	1	1	1	-	-	-	1	-	-	2	1	-	-	-	1
-	-	-	1	1	1	-	-	-	-	-	1	-	-	-	-	2	1	-	-
-	1	3	1	1	4	1	-	4	-	1	3	3	1	2	2	1	-	-	-
-	1	-	6	4	2	2	2	1	3	2	1	4	-	-	-	1	-	-	-
1	-	1	2	-	-	1	2	1	2	2	1	-	3	1	1	-	-	-	-
-	-	-	-	2	1	1	2	-	1	1	-	1	1	-	1	-	-	-	-
3	1	1	2	1	-	3	3	2	1	2	-	1	2	-	1	-	1	1	-
5	3	2	1	1	4	3	4	3	1	2	2	3	3	4	2	-	1	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	5	4	5	5	1	1	4	2	-	4	2	4	2	-	1	-	-	1
3	2	4	3	-	3	1	1	3	1	2	2	1	3	5	4	2	-	-	-
1	1	3	-	-	1	-	-	-	-	2	-	1	2	1	1	-	-	-	2
-	-	-	1	-	-	1	-	1	1	1	1	1	1	-	-	1	1	-	1
23	15	44	60	46	47	39	39	46	43	43	44	49	72	71	50	29	15	2	2
17	10	17	30	25	22	20	21	21	25	26	18	26	35	30	18	13	4	-	1
9	5	27	30	21	25	19	18	25	18	17	26	23	37	41	32	16	11	2	1
5	1	1	3	3	2	4	4	6	1	1	1	2	2	2	1	1	-	-	-
1	1	3	-	2	4	-	3	2	3	1	3	3	2	2	1	1	1	-	-
2	1	-	2	2	1	1	1	1	-	3	2	-	1	4	4	1	-	-	-
-	-	-	1	1	-	-	-	1	-	-	-	1	2	4	1	-	-	-	-
1	1	1	4	1	2	3	4	4	9	1	2	-	2	1	1	-	-	-	-
-	-	-	3	1	4	3	3	1	4	4	1	1	4	4	3	-	-	1	-
-	1	-	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	-	1
-	-	-	1	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	1	-	-	3	-	2	1	1	-	-
-	-	2	1	-	1	1	1	1	-	-	3	-	2	2	1	1	1	-	-
2	1	1	2	2	-	2	3	-	1	2	1	2	3	1	-	1	1	-	-
1	-	-	-	-	1	1	2	1	2	1	-	1	-	-	1	-	1	-	-
-	-	-	-	1	-	2	-	-	-	-	-	2	-	1	-	-	-	-	-
-	1	-	-	-	-	1	-	-	1	-	-	-	2	1	2	-	-	-	-
-	-	2	1	1	-	1	-	2	1	1	-	-	1	2	1	2	-	-	-
-	-	-	-	1	-	-	1	-	-	-	-	1	-	1	-	-	-	-	-
-	-	2	1	2	-	1	-	1	-	-	-	-	2	1	-	1	-	-	-
1	1	1	4	1	1	-	1	-	1	1	1	1	4	-	1	1	-	-	-
-	-	1	2	1	1	-	-	3	1	1	2	-	3	3	3	2	-	-	-
-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-
-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-
1	-	-	-	1	-	1	-	2	-	1	-	-	1	1	-	-	-	-	-
1	-	-	-	1	2	1	1	1	1	-	-	-	-	-	2	1	-	-	-
-	1	-	-	2	1	1	1	1	-	-	1	-	-	1	2	-	-	-	-

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
<i>Plymouth—Con.</i>										
Marion, . . .	690	{ Ma. 447 Fe. 513	2.32	16	6 10	2 —	— 1	— —	— —	— —
Marshfield, . .	1,809	{ Ma. 867 Fe. 942	1.54	28	8 20	2 1	2 1	— —	— —	— —
Mattapoisett, . .	1,451	{ Ma. 717 Fe. 734	1.85	27	16 11	1 1	— —	— —	— —	— —
Middleborough, .	4,565	{ Ma. 2,184 Fe. 2,381	1.23	56	26 30	6 1	— —	— 1	— —	1 1
No. Bridgewater, .	6,332	{ Ma. 3,156 Fe. 3,176	1.64	104	57 47	20 6	4 1	2 1	1 1	— 2
Pembroke, . . .	1,489	{ Ma. 747 Fe. 742	1.81	27	13 14	2 2	— —	2 —	— —	— —
Plymouth, . . .	6,068	{ Ma. 2,867 Fe. 3,201	1.80	108	48 60	8 5	1 2	3 1	1 —	— 1
Plympton, . . .	924	{ Ma. 450 Fe. 474	1.84	17	10 7	1 —	— —	— —	— —	— 1
Rochester, . . .	1,156	{ Ma. 557 Fe. 599	.78	9	5 4	— —	— —	— —	— —	— —
Scituate, . . .	2,269	{ Ma. 1,141 Fe. 1,128	1.41	32	18 14	5 1	1 —	— —	— —	— —
So. Scituate, . .	1,635	{ Ma. 815 Fe. 820	1.10	28	12 16	1 1	— —	— —	— —	— —
Wareham, . . .	2,798	{ Ma. 1,404 Fe. 1,394	1.37	40	22 18	3 2	2 —	1 1	— 1	1 —
W. Bridgewater, .	1,825	{ Ma. 874 Fe. 951	1.09	20	15 5	1 —	1 —	— —	— —	— —
SUFFOLK Co., . .	208,212	{ Tot. 208,212 Ma. 96,529 Fe. 111,683 U. .	. 2.25	. 4,675	4,675 2,395 2,279 1	1152 608 543 1	366 192 174 —	132 66 66 —	111 59 52 —	85 48 37 1
Boston, . . .	192,818	{ Ma. 89,134 Fe. 103,184	2.28	4,377	2,242 2,135	573 514	178 162	60 53	55 49	46 36
Chelsea, . . .	14,403	{ Ma. 6,605 Fe. 7,798 U. .	1.95	281	143 137 1	32 28 1	14 12 —	6 8 —	4 3 —	2 1 —
No. Chelsea, . .	858	{ Ma. 437 Fe. 421	1.05	9	6 3	2 —	— —	— —	— —	— —
Winthrop, . . .	633	{ Ma. 353 Fe. 280	1.26	8	4 4	1 1	— —	— —	— —	— —

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to 100	Unknown.
-	-	-	1	-	-	-	1	1	-	-	-	-	1	-	-	1	-	-	-
-	-	-	1	-	-	-	1	1	-	-	1	-	-	3	-	-	-	-	-
-	-	1	-	1	-	-	1	1	3	1	2	3	1	-	1	1	-	-	-
-	1	1	2	2	1	-	1	-	4	1	-	-	3	2	1	-	1	-	-
1	1	2	5	3	4	2	1	2	2	2	-	1	2	2	2	-	1	-	-
2	2	-	-	1	-	-	-	1	-	1	-	3	1	1	2	-	1	-	-
1	1	5	2	3	4	2	2	2	1	1	-	-	3	3	-	2	1	-	-
-	1	4	4	2	7	1	1	-	2	2	3	4	3	8	6	2	1	-	-
1	-	-	-	-	1	-	-	1	1	1	1	2	-	2	-	1	-	-	-
-	-	-	1	-	1	-	-	-	-	-	-	-	1	-	1	1	-	-	-
-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-
-	-	-	2	1	-	-	-	1	2	1	3	2	2	-	-	-	-	-	-
-	-	-	1	-	-	-	-	-	-	1	1	1	2	1	-	1	-	1	1
1	-	1	2	2	-	-	-	1	-	-	2	-	-	3	2	1	1	-	-
2	-	2	1	-	1	-	1	-	2	1	1	1	2	-	-	1	-	-	-
-	-	2	1	1	-	-	-	-	-	1	1	2	1	-	1	1	2	-	-
-	-	-	2	1	2	1	1	-	1	1	1	1	-	1	1	-	-	-	-
-	-	1	-	-	-	-	-	-	-	-	-	-	2	1	-	1	-	-	-
100	96	166	235	266	242	253	204	168	179	166	196	139	116	92	73	39	15	11	4
87	51	85	151	145	131	115	110	94	104	84	61	69	52	31	31	14	2	3	2
82	45	81	134	121	111	133	94	74	75	82	85	70	64	61	42	25	13	8	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
85	43	73	147	131	123	105	102	91	100	78	59	61	43	30	30	12	1	3	2
77	42	74	128	113	100	124	91	72	73	77	80	66	61	57	41	23	11	6	2
1	3	11	3	14	7	9	8	3	4	5	2	7	3	1	1	2	1	-	-
5	3	7	8	8	11	12	3	2	2	5	5	3	3	3	1	2	1	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	1	1	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	1	1	-	-	-	1	-	1	-	1	-	-	1	-	-

TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION--1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
WORCESTER CO.	162,912	{ Tot. 162,912 Ma. 79,196 Fe. 83,716 U. .	. 1.82 .	. 2,957 .	2,957 1,427 1,528 2	543 303 238 2	207 98 109 -	115 57 58 -	72 47 25 -	43 23 25 -
Ashburnham, .	2,153	{ Ma. 1,040 Fe. 1,113	1.90	41	23 18	6 -	- 2	1 -	2 -	- 1
Athol, . .	2,814	{ Ma. 1,368 Fe. 1,446	1.24	35	12 23	- 2	1 -	1 1	- -	- 1
Auburn, . .	959	{ Ma. 473 Fe. 486	.63	6	3 3	- -	- -	- -	- -	1 -
Barre, . .	2,856	{ Ma. 1,392 Fe. 1,464	1.37	39	18 21	1 2	3 1	1 -	- -	- -
Berlin, . .	1,061	{ Ma. 539 Fe. 522	1.51	16	6 10	- 1	- 1	- -	- -	- -
Blackstone, .	4,857	{ Ma. 2,257 Fe. 2,600	1.33	67	33 29	16 9	- 2	2 1	1 1	1 2
Bolton, . .	1,502	{ Ma. 766 Fe. 736	1.73	26	13 13	1 3	- 1	- -	1 -	1 -
Boylston, . .	792	{ Ma. 381 Fe. 411	1.77	14	7 7	1 -	- -	- -	- 1	- -
Brookfield, .	2,101	{ Ma. 1,038 Fe. 1,063	1.62	34	18 16	3 4	1 -	- 1	- -	- -
Charlton, . .	1,925	{ Ma. 936 Fe. 989	2.03	39	22 17	3 2	1 4	- -	1 1	- -
Clinton, . .	4,021	{ Ma. 1,780 Fe. 2,241	2.19	38	42 46	9 8	3 6	3 3	2 2	1 2
Dana, . .	789	{ Ma. 392 Fe. 397	1.01	8	4 4	- -	- -	- -	1 -	1 -
Douglas, . .	2,155	{ Ma. 1,051 Fe. 1,104	1.90	41	25 16	9 1	3 2	1 1	- -	- 1
Dudley, . .	2,076	{ Ma. 998 Fe. 1,078	2.02	42	22 20	4 4	3 1	2 3	- -	- -
Fitchburg, . .	8,118	{ Ma. 3,937 Fe. 4,181	2.16	175	89 86	16 16	6 5	6 -	2 1	- -
Gardner, . .	2,553	{ Ma. 1,239 Fe. 1,314	1.41	36	21 15	6 1	- 4	1 1	1 -	- 1
Grafton, . .	3,961	{ Ma. 1,903 Fe. 2,058	1.19	47	21 26	4 5	3 -	1 1	- -	- 2
Hardwick, . .	1,967	{ Ma. 945 Fe. 1,022	1.27	25	12 13	1 -	- -	1 1	- -	- -
Harvard, . .	1,355	{ Ma. 629 Fe. 726	1.92	26	10 16	- 4	- -	- -	- -	- -

Ages and Sex, by Towns.

62 59	63 60	64 61	65 62	66 63	67 64	68 65	69 66	70 67	71 68	72 69	73 70	74 71	75 72	76 73	77 74	78 75	79 76	80 77	81 78	82 79	83 80	84 81	85 82	86 83	87 84	88 85	89 86	90 87	91 88	92 89	93 90	94 91	95 92	96 93	97 94	98 95	99 96	100 97	101 98	102 99	103 100	104 101	105 102	106 103	107 104	108 105	109 106	110 107	111 108	112 109	113 110	114 111	115 112	116 113	117 114	118 115	119 116	120 117	121 118	122 119	123 120	124 121	125 122	126 123	127 124	128 125	129 126	130 127	131 128	132 129	133 130	134 131	135 132	136 133	137 134	138 135	139 136	140 137	141 138	142 139	143 140	144 141	145 142	146 143	147 144	148 145	149 146	150 147	151 148	152 149	153 150	154 151	155 152	156 153	157 154	158 155	159 156	160 157	161 158	162 159	163 160	164 161	165 162	166 163	167 164	168 165	169 166	170 167	171 168	172 169	173 170	174 171	175 172	176 173	177 174	178 175	179 176	180 177	181 178	182 179	183 180	184 181	185 182	186 183	187 184	188 185	189 186	190 187	191 188	192 189	193 190	194 191	195 192	196 193	197 194	198 195	199 196	200 197	201 198	202 199	203 200	204 201	205 202	206 203	207 204	208 205	209 206	210 207	211 208	212 209	213 210	214 211	215 212	216 213	217 214	218 215	219 216	220 217	221 218	222 219	223 220	224 221	225 222	226 223	227 224	228 225	229 226	230 227	231 228	232 229	233 230	234 231	235 232	236 233	237 234	238 235	239 236	240 237	241 238	242 239	243 240	244 241	245 242	246 243	247 244	248 245	249 246	250 247	251 248	252 249	253 250	254 251	255 252	256 253	257 254	258 255	259 256	260 257	261 258	262 259	263 260	264 261	265 262	266 263	267 264	268 265	269 266	270 267	271 268	272 269	273 270	274 271	275 272	276 273	277 274	278 275	279 276	280 277	281 278	282 279	283 280	284 281	285 282	286 283	287 284	288 285	289 286	290 287	291 288	292 289	293 290	294 291	295 292	296 293	297 294	298 295	299 296	300 297	301 298	302 299	303 300	304 301	305 302	306 303	307 304	308 305	309 306	310 307	311 308	312 309	313 310	314 311	315 312	316 313	317 314	318 315	319 316	320 317	321 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693	697 694	698 695	699 696	700 697	701 698	702 699	703 700	704 701	705 702	706 703	707 704	708 705	709 706	710 707	711 708	712 709	713 710	714 711	715 712	716 713	717 714	718 715	719 716	720 717	721 718	722 719	723 720	724 721	725 722	726 723	727 724	728 725	729 726	730 727	731 728	732 729	733 730	734 731	735 732	736 733	737 734	738 735	739 736	740 737	741 738	742 739	743 740	744 741	745 742	746 743	747 744	748 745	749 746	750 747	751 748	752 749	753 750	754 751	755 752	756 753	757 754	758 755	759 756	760 757	761 758	762 759	763 760	764 761	765 762	766 763	767 764	768 765	769 766	770 767	771 768	772 769	773 770	774 771	775 772	776 773	777 774	778 775	779 776	780 777	781 778	782 779	783 780	784 781	785 782	786 783	787 784	788 785	789 786	790 787	791 788	792 789	793 790	794 791	795 792	796 793	797 794	798 795	799 796	800 797	801 798	802 799	803 800	804 801	805 802	806 803	807 804	808 805	809 806	810 807	811 808	812 809	813 810	814 811	815 812	816 813	817 814	818 815	819 816	820 817	821 818	822 819	823 820	824 821	825 822	826 823	827 824	828 825	829 826	830 827	831 828	832 829	833 830	834 831	835 832	836 833	837 834	838 835	839 836	840 837	841 838	842 839	843 840	844 841	845 842	846 843	847 844	848 845	849 846	850 847	851 848	852 849	853 850	854 851	855 852	856 853	857 854	858 855	859 856	860 857	861 858	862 859	863 860	864 861	865 862	866 863	867 864	868 865	869 866	870 867	871 868	872 869	873 870	874 871	875 872	876 873	877 874	878 875	879 876	880 877	881 878	882 879	883 880	884 881	885 882	886 883	887 884	888 885	889 886	890 887	891 888	892 889	893 890	894 891	895 892	896 893	897 894	898 895	899 896	900 897	901 898	902 899	903 900	904 901	905 902	906 903	907 904	908 905	909 906	910 907	911 908	912 909	913 910	914 911	915 912	916 913	917 914	918 915	919 916	920 917	921 918	922 919	923 920	924 921	925 922	926 923	927 924	928 925	929 926	930 927	931 928	932 929	933 930	934 931	935 932	936 933	937 934	938 935	939 936	940 937	941 938	942 939	943 940	944 941	945 942	946 943	947 944	948 945	949 946	950 947	951 948	952 949	953 950	954 951	955 952	956 953	957 954	958 955	959 956	960 957	961 958	962 959	963 960	964 961	965 962	966 963	967 964	968 965	969 966	970 967	971 968	972 969	973 970	974 971	975 972	976 973	977 974	978 975	979 976	980 977	981 978	982 979	983 980	984 981	985 982	986 983	987 984	988 985	989 986	990 987	991 988	992 989	993 990	994 991	995 992	996 993	997 994	998 995	999 996	1000 997	1001 998	1002 999	1003 1000	1004 1001	1005 1002	1006
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TABLE VII.—Continued.

COUNTIES AND TOWNS.	POPULATION—1865.		DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	Sex.	Per ct. to Pop.	Persons.	Sex.					
Worcester—Con. Holden, . . .	1,846	{ Ma. 879 Fe. 967	1.68	31	9 22	1 2	— —	— 1	— —	— —
Hubbardston, . .	1,546	{ Ma. 765 Fe. 781	1.10	17	6 11	— —	— —	— —	— —	— —
Lancaster, . . .	1,752	{ Ma. 738 Fe. 1,014	.91	16	8 8	— —	— —	— —	1 —	1 —
Leicester, . . .	2,527	{ Ma. 1,242 Fe. 1,285	1.73	45	18 27	5 1	2 —	— 2	— —	— —
Leominster, . . .	3,313	{ Ma. 1,597 Fe. 1,716	2.05	68	34 34	4 3	2 3	— 1	1 —	1 —
Lunenburg, . . .	1,167	{ Ma. 552 Fe. 615	1.71	20	9 11	1 1	— —	— 1	— —	— —
Mendon, . . .	1,207	{ Ma. 592 Fe. 615	1.57	19	8 11	— —	— —	— —	1 —	— —
Milford, . . .	9,108	{ Ma. 4,508 Fe. 4,600	1.70	155	86 69	25 16	4 5	3 1	2 —	1 —
Millbury, . . .	3,780	{ Ma. 1,826 Fe. 1,954	1.98	75	40 35	11 6	5 1	1 1	1 1	1 1
New Braintree, . .	752	{ Ma. 361 Fe. 391	1.86	14	5 9	— —	— 1	— —	— —	— —
Northborough, . .	1,623	{ Ma. 777 Fe. 846	1.05	17	7 10	1 2	— —	— —	— —	1 —
Northbridge, . . .	2,642	{ Ma. 1,315 Fe. 1,327	1.67	44	18 26	6 9	1 6	1 —	— —	— —
No. Brookfield, . .	2,514	{ Ma. 1,234 Fe. 1,280	2.19	55	29 26	5 3	7 3	1 1	1 2	2 —
Oakham, . . .	925	{ Ma. 446 Fe. 479	1.95	18	9 9	2 —	— —	— —	— 1	— —
Oxford, . . .	2,713	{ Ma. 1,323 Fe. 1,390	1.92	52	26 26	6 2	2 2	1 —	2 —	1 —
Paxton, . . .	626	{ Ma. 316 Fe. 310	1.60	10	5 5	1 1	— —	— —	— —	— —
Petersham, . . .	1,423	{ Ma. 697 Fe. 731	1.40	20	11 9	2 —	— —	— —	— —	— —
Phillipston, . . .	725	{ Ma. 362 Fe. 363	1.52	11	4 7	1 1	— —	— —	— —	— —
Princeton, . . .	1,239	{ Ma. 594 Fe. 645	1.37	17	8 9	— —	— —	— —	— —	— —
Royalston, . . .	1,441	{ Ma. 693 Fe. 748	1.94	28	17 11	— 1	— —	1 —	1 —	1 1
Rutland, . . .	1,011	{ Ma. 504 Fe. 507	1.88	19	3 16	2 2	— —	— —	— —	— —

TABLE VII.—Concluded.

COUNTIES AND TOWNS.	POPULATION—1865.			DEATHS.			Und. 1	1 to 2	2 to 3	3 to 4	4 to 5
	Persons.	SEX.		Per ct. to Pop.	Persons	SEX.					
Worcester—Con.											
Shrewsbury, .	1,570	{ Ma.	773	1.78	28	19	5	1	—	—	—
		{ Fe.	797			9	3	—	—	—	—
Southborough, .	1,750	{ Ma.	847	1.43	25	19	1	—	1	1	1
		{ Fe.	903			13	—	2	2	—	—
Southbridge, .	4,131	{ Ma.	1,940	2.83	117	52	17	5	2	3	1
		{ Fe.	2,191			65	9	7	5	3	2
Spencer, .	3,024	{ Ma.	1,540	2.05	62	27	4	1	2	5	1
		{ Fe.	1,484			35	5	5	2	1	1
Sterling, .	1,663	{ Ma.	819	1.50	25	14	3	1	—	—	—
		{ Fe.	849			11	—	—	—	—	—
Sturbridge, .	1,993	{ Ma.	925	1.30	26	9	1	—	—	—	—
		{ Fe.	1,068			17	—	1	1	—	1
Sutton, .	2,363	{ Ma.	1,134	1.78	42	19	—	1	1	1	1
		{ Fe.	1,229			23	1	2	—	—	—
Templeton, .	2,390	{ Ma.	1,188	2.09	50	20	4	2	1	—	—
		{ Fe.	1,202			30	4	3	—	1	—
Upton, .	2,018	{ Ma.	996	1.09	22	10	3	—	1	—	—
		{ Fe.	1,022			12	—	4	—	—	—
Uxbridge, .	2,833	{ Ma.	1,351	1.55	44	23	5	—	1	—	—
		{ Fe.	1,482			21	5	1	—	—	—
Warren, .	2,180	{ Ma.	1,101	1.10	24	15	2	—	3	—	—
		{ Fe.	1,079			9	1	—	—	—	—
Webster, .	3,608	{ Ma.	1,742	2.02	73	24	5	7	1	2	1
		{ Fe.	1,866			48	10	2	5	3	2
		{ U.	.	.	.	1	1	—	—	—	—
Westborough, .	3,141	{ Ma.	1,630	1.43	45	25	5	1	2	—	—
		{ Fe.	1,511			20	4	—	—	1	—
W. Boylston, .	2,204	{ Ma.	1,143	1.09	25	11	4	—	—	—	1
		{ Fe.	1,151			14	1	3	—	—	1
W. Brookfield, .	1,549	{ Ma.	741	2.19	34	15	2	2	—	—	—
		{ Fe.	808			19	3	—	2	—	—
Westminster, .	1,639	{ Ma.	792	1.16	19	9	1	—	1	1	—
		{ Fe.	847			10	1	—	—	—	—
Winchendon, .	2,301	{ Ma.	1,366	1.71	48	21	3	2	—	—	—
		{ Fe.	1,435			26	4	1	1	—	—
		{ U.	.	.	.	1	1	—	—	—	—
Worcester, .	30,055	{ Ma.	14,783	2.30	692	336	84	28	13	13	3
		{ Fe.	15,272			356	75	28	19	6	6

Ages and Sex, by Towns.

5 to 10	10 to 15	15 to 20	20 to 25	25 to 30	30 to 35	35 to 40	40 to 45	45 to 50	50 to 55	55 to 60	60 to 65	65 to 70	70 to 75	75 to 80	80 to 85	85 to 90	90 to 95	95 to over	Unknown
-	-	-	1	-	1	-	-	1	1	-	1	-	2	4	1	1	-	-	-
-	-	-	1	-	-	-	-	1	-	-	1	1	-	1	1	-	-	-	-
-	-	2	2	3	1	-	1	1	1	-	-	2	-	1	-	-	-	-	1
5	3	1	4	2	1	1	-	-	1	1	-	2	2	-	1	-	-	-	-
5	3	3	4	3	2	3	2	3	1	1	-	-	2	1	1	-	-	-	-
1	1	1	-	1	-	2	1	-	2	-	1	2	-	1	-	1	-	-	-
1	3	1	3	1	-	-	2	2	-	-	2	-	1	3	1	1	-	-	-
1	-	2	-	-	-	1	-	-	-	-	2	-	2	-	1	-	1	-	-
-	2	1	-	1	-	1	1	-	-	-	-	1	-	1	-	3	-	-	-
6	1	-	1	1	1	-	-	-	1	-	1	-	-	1	1	-	-	-	-
-	1	1	1	1	1	1	1	-	1	1	3	1	-	1	-	-	-	-	-
-	1	1	-	1	1	1	1	-	1	1	1	-	-	1	-	-	-	-	-
-	2	1	1	2	2	1	-	3	-	2	3	2	3	1	-	1	-	-	1
-	1	1	-	1	1	3	1	1	-	-	-	4	-	1	1	1	-	-	-
1	1	-	4	-	4	3	2	2	-	-	-	-	-	3	-	1	-	-	-
-	-	-	1	-	1	-	1	-	-	1	-	1	-	-	-	-	-	-	1
1	-	-	1	-	-	-	-	-	-	2	-	-	1	1	1	1	-	-	-
-	2	1	1	-	1	1	1	-	2	1	1	2	4	-	1	1	-	-	-
-	2	3	-	-	-	-	-	1	-	1	2	2	-	1	1	-	1	-	-
2	1	2	1	1	-	-	1	1	-	1	-	-	1	-	-	1	-	-	-
-	-	-	-	-	1	-	-	1	-	-	-	1	1	-	2	-	-	-	-
1	-	-	2	1	1	-	1	1	-	1	1	-	-	-	-	-	-	-	-
4	4	3	3	1	1	1	1	-	-	1	1	1	-	2	-	1	-	-	2
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	3	-	3	1	-	-	2	-	1	-	-	1	-	1	-	-	-	-	-
-	1	1	3	1	1	1	-	-	2	-	1	1	-	-	2	1	-	-	-
-	-	-	1	-	-	1	2	-	1	-	-	-	-	1	1	-	-	-	-
-	1	-	1	1	1	1	1	-	-	1	-	-	-	1	1	1	-	-	-
1	-	-	-	1	-	1	2	-	1	-	1	1	3	1	-	-	-	-	-
3	-	2	-	2	-	1	1	-	2	-	2	-	-	1	-	-	-	-	-
-	-	-	-	-	-	-	-	-	1	2	-	1	-	-	-	-	-	-	-
-	-	-	2	-	-	-	2	-	1	-	-	2	-	1	-	-	1	-	1
1	1	-	1	1	-	-	1	3	-	3	-	2	2	1	-	-	-	-	-
-	-	4	-	-	-	2	-	1	-	-	1	1	5	4	-	2	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	3	9	22	19	13	19	14	11	11	12	16	10	6	9	1	1	-	-	1
13	4	12	20	27	17	14	11	17	16	9	11	13	9	10	13	3	2	1	-

TABLE VIII.—Continued.

SEX.	DEATHS.			MONTHS.												CAUSES OF DEATH.	AGES.															
	Males	SEX.		Total.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.		December.	Unknown.														
		Fem.	Unk.																													
Fem.,	.	1	.	1	1	—	—	—	—	—	—	—	—	—	—	—	—	Abortion, .	—	—	—	—	1	—	—	—	—	—	—	—	—	
Males,	33	.	.	54	2	1	2	5	5	3	5	3	2	1	2	2	—	Abcess, .	8	2	—	6	5	3	4	—	1	—	—	—	—	
Fem.,	.	21	.	.	—	3	2	1	2	1	7	—	—	1	1	—	—	“	6	—	—	2	—	3	2	—	—	—	—	—	—	
Males,	4	.	.	5	—	1	—	—	—	1	2	—	—	—	—	—	—	Abcess, Lumbar, .	—	—	—	—	—	2	—	—	—	—	—	—	—	
Fem.,	.	1	.	.	—	—	—	—	—	—	—	—	—	—	—	—	—	“	—	—	—	—	—	1	—	—	—	—	—	—	—	
Males,	22	.	.	77	3	2	2	3	6	1	5	1	1	2	3	4	—	Anæmia, .	5	—	—	1	1	4	2	4	1	2	—	—	—	
Fem.,	.	55	.	.	2	5	5	5	8	8	—	—	6	1	8	—	—	“	4	—	—	8	14	8	2	4	3	—	—	—	—	
Males,	7	.	.	11	1	2	—	—	—	—	—	—	1	—	—	2	—	Aneurism, .	—	—	—	—	—	—	1	—	—	—	—	—	—	
Fem.,	.	4	.	.	1	—	—	—	—	—	1	1	1	—	—	—	—	“	—	—	—	—	4	1	—	—	—	—	—	—	—	
Males,	3	.	.	6	—	—	—	—	—	—	—	—	—	1	—	—	—	Angina Pectoris, .	1	—	—	—	—	—	—	—	—	—	—	—	—	
Fem.,	.	3	.	.	1	2	1	—	—	—	—	—	1	—	—	—	—	“	—	—	—	—	—	—	—	2	1	—	—	—	—	
Males,	145	.	.	261	15	12	16	6	13	9	10	9	9	17	16	13	—	Apoplexy, .	1	—	—	3	7	17	17	25	31	29	14	1	—	—
Fem.,	.	116	.	.	18	9	11	10	4	6	16	6	10	10	10	6	—	“	—	—	—	—	4	5	12	21	33	24	17	—	—	—
Males,	8	.	.	17	1	—	—	1	—	—	—	2	1	2	1	—	—	Ascites, .	2	—	—	—	—	2	—	—	1	—	—	—	—	—
Fem.,	.	9	.	.	—	—	—	2	—	1	2	1	3	—	—	—	—	“	—	—	—	—	—	1	8	—	—	—	—	—	—	—

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TABLE VII.—Continued.

SEX.	DEATHS.					
	Sex.					
	Males.	Females.				
Males,	17	20				
Fem.,	.	.				
Males,	18	16				
Fem.,	.	.				
Males,	112	.				
Fem.,	.	102				
Males,	41	.				
Fem.,	.	17				
Males,	100	.				
Fem.,	.	102				
Males,	50	.				
Fem.,	.	45				
Unk.,	.	1				
Males,	4	.				
Fem.,	.	3				
Males,	244	.				
Fem.,	.	52				

1866.]

CAUSES OF DEATH.

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	484	462	8	949	3	8	6	4	7	17	71	174	116	47	19	11	1	Dysentery,	298	88	17	11	12	17	18	25	20	27	8	-
Males,	.	.	.	.	2	8	9	4	7	9	68	166	109	56	20	4	-	"	204	40	18	11	22	23	28	29	48	27	8	5
Fem.,	.	.	.	.	-	-	-	1	-	-	-	-	2	-	-	-	-	"	8	-	-	-	-	-	-	-	-	-	-	-
Unk.,	.	.	.	.	-	-	-	1	-	-	-	-	-	-	-	-	-	"	-	-	-	-	-	-	-	-	-	-	-	-
Males,	10	.	.	28	-	1	2	1	-	1	1	1	1	-	1	1	-	Dyspepsia,	2	-	-	-	-	-	-	3	2	2	-	-
Fem.,	.	13	.	.	-	-	-	1	-	1	1	2	6	-	1	1	-	"	-	-	-	-	-	-	5	2	1	-	-	-
Males,	117	128	.	240	7	6	12	10	6	6	6	22	11	11	12	8	-	Enteritis,	44	8	5	5	13	7	13	7	9	4	1	1
Fem.,	.	.	.	.	11	10	12	16	5	14	11	14	9	9	7	5	-	"	80	4	8	6	17	16	9	11	17	5	4	1
Males,	32	24	.	56	3	2	3	5	3	6	3	-	1	1	3	2	-	Epilepsy,	1	1	2	7	4	4	1	3	1	6	2	-
Fem.,	.	.	.	.	1	1	4	1	2	4	2	3	1	2	3	-	-	"	-	-	1	3	6	1	6	2	2	1	1	1
Males,	75	67	.	142	9	11	5	4	5	4	6	7	5	7	6	6	-	Erysipelas,	17	5	-	1	5	7	4	15	8	10	2	1
Fem.,	.	.	.	.	6	5	4	5	8	4	8	1	4	11	6	10	-	"	18	4	1	1	2	8	6	8	6	11	7	-
Males,	5	.	.	11	-	-	-	2	-	-	-	-	2	-	1	-	-	Exposure,	1	-	-	-	1	-	-	1	-	-	-	-
Fem.,	.	6	.	.	4	-	1	-	-	-	-	-	1	-	-	-	-	"	2	-	-	-	-	2	1	1	-	-	-	-
Males,	10	2	.	12	1	-	1	-	1	1	1	2	-	1	2	-	-	Fever, Intermittent,	1	-	-	-	1	3	2	2	-	1	-	-
Fem.,	.	.	.	.	-	-	-	1	-	-	-	1	-	-	-	-	-	"	-	-	-	-	-	-	-	-	-	-	-	-
Males,	10	2	.	12	-	2	-	-	1	-	-	-	1	3	1	2	-	Fever, Remittent,	-	2	1	-	2	2	-	-	3	-	-	-
Fem.,	.	.	.	.	1	-	-	-	-	-	-	1	-	-	-	-	-	"	1	1	-	-	-	-	-	-	-	-	-	-
Males,	528	567	.	1091	41	46	35	31	26	23	30	56	66	69	61	39	-	Fever, Typhus,	55	44	47	66	94	58	48	38	38	26	10	4
Fem.,	.	.	.	.	57	36	36	27	40	25	26	66	63	77	58	56	-	"	48	40	55	88	114	59	38	35	46	32	10	2
Unk.,	.	.	1	.	-	-	-	-	-	-	-	-	-	-	-	1	-	"	1	-	-	-	-	-	-	-	-	-	-	-
Males,	1	1	.	2	-	1	-	-	-	-	-	-	-	-	-	-	-	Fistula,	-	-	-	-	-	-	-	1	-	-	-	-
Fem.,	.	.	.	.	-	-	-	-	-	1	-	-	-	-	-	-	-	"	-	-	-	-	-	-	-	-	1	-	-	-

[illegible]

Males, Fem.,	5	8	6	11	3	1	6	8	1	4	2	3	1	8	3	1	4	2	1	3	1	4	2	1	3	1	8	3	1	4	2	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1	4	2	1	3	1</
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TABLE VIII.—Concluded.

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	SEX.			Totals.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.		December.	Unknown.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
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Males, Fem.,	2	.	.	2	-	-	-	-	-	-	-	-	-	-	1	-	1	-	Thrush, .	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE IX.—CAUSES OF DEATH—CLASSIFIED ARRANGEMENT.

Distinguishing by Counties, the registered number of Deaths, from various specified causes, (statistically classified,) during the year
1866.

[Still-births included.]

CAUSES OF DEATH.	Grave	Remittent	Intermittent	Diurnal	Duke and Hutchinson	Excess	Febrile	Hemiplegic	Hemiplegic	Hemiplegic	Midnight	Nocturnal	Refugee	Wounded
All Causes.*	24,683	518	980	1,671	159	8,271	509	1,249	679	4,518	2,012	1,049	5,071	8,047
Specified Causes,*	24,105	504	901	1,637	157	8,179	503	1,199	662	4,390	1,955	1,027	4,980	3,001
(CLASSES.)														
I.—ZYMOTIC DISEASES, . . .	5,861	125	268	880	40	804	136	860	172	1,057	412	192	1,117	798
II.—CONSTITUTIONAL DISEASES, . . .	6,422	140	212	419	40	894	138	292	171	1,171	508	340	1,347	760
III.—LOCAL DISEASES, . . .	6,469	110	281	477	80	730	150	245	214	1,168	549	257	1,501	807
IV.—DEVELOPMENTAL DISEASES, . . .	4,878	96	148	294	38	641	64	244	92	848	411	201	794	507
V.—VIOLENT DEATHS, . . .	975	33	44	67	9	110	18	58	13	146	80	37	281	129
I.—1.	5,770	123	262	373	40	795	137	851	170	1,049	410	190	1,080	790
2. Zymotic Diseases, . . .	20	—	—	1	—	8	—	2	—	1	—	1	11	1
3. Diabetic Diseases, . . .	54	2	1	4	—	4	1	3	2	7	2	—	24	4
4. Parasitic Diseases, . . .	17	—	3	2	—	2	—	4	—	—	—	1	2	3
II.—1. Diabetic Diseases, . . .	1,092	21	50	92	8	163	30	53	38	210	88	52	161	131
2. Tubercular Diseases, . . .	5,380	119	162	827	32	731	103	239	133	931	420	238	1,186	629

* Including Still-births

TABLE IX.—Continued.

III.—1. Diseases of	2,334	49	35	194	10	249	44	95	83	400	204	102	541	278
2. Diseases of	871	19	25	58	8	182	30	44	29	153	76	86	165	101
3. Diseases of	2,024	19	78	143	4	208	33	72	67	427	157	61	490	265
4. Diseases of	829	16	28	53	7	104	30	24	28	121	81	40	185	112
5. Diseases of	222	4	7	20	—	26	8	8	8	32	18	10	51	80
6. Diseases of	81	—	—	3	—	3	8	—	1	4	4	—	12	1
7. Diseases of	88	—	8	6	—	5	—	8	1	17	4	6	24	14
8. Diseases of	75	8	5	5	1	8	2	4	2	14	5	2	23	6
V.—1. Dev. Diseases of Children,	2,686	53	82	170	9	337	24	151	42	493	247	94	631	296
2. Dev. Diseases of Adults,	201	4	4	14	—	82	6	8	7	52	20	6	22	26
3. Dev. Diseases of Old People,	1,358	39	53	99	10	207	30	80	41	288	142	92	98	179
4. Diseases of Nutrition,	183	—	9	11	19	6	4	5	2	15	2	9	43	9
V.—1. Accident or Negligence,	594	27	26	36	7	72	10	43	7	81	37	20	147	81
2. Battle,	1	—	1	—	—	—	—	—	—	—	—	—	—	—
3. Homicide,	11	1	—	—	—	—	—	—	—	1	—	1	5	3
4. Suicide,	73	—	2	12	—	7	2	2	—	12	7	7	11	11
5. Execution,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
6. Violent Deaths, not classed,	296	5	15	19	2	31	6	18	6	52	36	9	68	84
Sudden Deaths, (Causes unascertained,)	18	2	—	2	—	4	—	1	1	3	2	—	—	3
Causes not specified,*	580	12	29	32	2	88	6	49	16	125	55	22	81	48

DISEASES.
I.—1. Miasmatic.

1866.]		CLASSIFICATION OF DEATHS.													
DISEASES.															
1.--l. Miasmatic.															
Totals,	.	.	.	.	.	.	.	.	.	.	.	.	.	.
1. Smallpox,	141	-	1	1	2	49	-	-	-	22	5	4	52	5	
2. Measles,	109	1	5	4	-	20	2	12	2	29	1	1	21	11	
3. Scarletina,	385	22	21	1	6	18	38	18	24	27	38	5	67	110	
4. Diphtheria,	399	6	25	38	-	60	14	14	11	71	32	22	58	58	
5. Quinsy,	8	-	-	1	-	-	1	-	-	2	1	1	1	1	
6. Croup,	481	8	18	27	3	55	7	17	5	99	40	11	90	51	
7. Whooping Cough,	287	6	12	19	-	36	3	31	6	64	21	8	43	43	
8. Typhus (and Infantile Fever,)	1,091	36	75	76	18	159	29	101	42	164	76	44	121	159	
9. Erysipelas,	147	3	-	11	1	14	4	9	5	32	12	9	21	26	
10. Metris (Puerperal Fever,)	40	-	3	1	-	5	2	1	-	14	-	4	7	3	
11. Carbuncle,	7	-	-	-	-	-	-	-	-	4	1	-	2	-	
12. Influenza,	50	2	1	3	-	8	-	7	6	7	3	5	-	8	
13. Dysentery,	949	28	51	97	4	148	20	44	31	146	54	31	140	160	
14. Diarrhoea,	304	4	11	24	-	28	3	29	9	66	21	18	89	16	
15. Cholera Infantum,	1,078	3	21	63	2	164	13	65	19	231	89	28	278	107	
16. Cholera,	192	3	13	5	1	19	-	9	6	48	12	-	62	19	
17. Ague,	12	1	-	1	1	-	2	-	1	2	-	-	3	1	
18. Remittent Fever,	12	2	-	1	1	-	1	-	-	1	-	-	6	-	
19. Rheumatism,	128	3	5	5	1	21	3	3	3	25	9	9	24	17	

* Including 65 deaths from "Hæmorrhage," 74 from "Tumor," and 37 from "Inflammation."

TABLE IX.—Continued.

CAUSES OF DEATH.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Knox.	Franklin.	Hamden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
I.—2. <i>Enthetic.</i>														
Totals,	20	—	—	1	—	3	—	2	—	1	—	1	11	1
1. Syphilis,	17	—	—	—	—	3	—	1	—	1	—	1	10	1
2. Stricture of Urethra,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
3. Hydrophobia,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
4. Glanders, (and Malignant Pustule,)	8	—	—	1	—	—	—	1	—	—	—	—	1	—
I.—3. <i>Dietic.</i>														
Totals,	54	2	1	4	—	4	1	3	2	7	2	—	24	4
1. Privation,	3	2	—	—	—	1	—	—	—	—	—	—	—	—
2. Purpura and Scurvy,	8	—	—	1	—	—	—	—	—	2	—	—	5	—
3. Delirium Tremens,	14	—	—	1	—	3	—	1	—	2	—	—	6	—
4. Intemperance,	29	—	1	2	—	—	1	2	2	3	2	—	13	1
I.—4. <i>Parasitic.</i>														
Totals,	17	—	3	2	—	2	—	4	—	—	—	1	2	3
1. Thrush,	2	—	1	—	—	—	—	—	—	—	—	—	1	—
2. Worms,	15	—	2	2	—	2	—	4	—	—	—	1	1	3
II.—1. <i>Diathetic.</i>														
Totals,	1,092	21	50	92	8	163	30	53	38	210	83	52	161	131
1. Gout,	1	—	—	—	—	—	—	—	1	—	—	—	—	—
2. Dropsy and Anæmia,	539	8	28	62	2	73	12	23	15	107	88	28	72	71

CLASSIFICATION OF DEATHS.

	416	10	18	24	5	40	15	19	20	84	88	-7	73	46
a. Cancer,	:	1	1	8	-	40	2	10	1	11	5	5	6	11
4. Noma, (Canker),	:	2	8	8	1	1	1	1	1	8	7	2	7	8
5. Mortification,	:													
II.—3. Tubercular.														
Totals,	5,880	119	162	327	82	781	108	289	188	961	420	288	1,186	629
1. Scrofula,	110	8	8	5	-	7	4	8	2	28	8	12	24	11
2. Tabes Mesenterica,	282	5	2	10	2	10	2	8	5	28	18	9	128	15
3. Phthisis, (Consumption of Lungs),	4,600	108	147	806	80	658	94	216	115	888	371	258	905	564
4. Hydrocephalus,	388	3	10	6	-	56	3	12	11	77	28	14	129	39
III.—1. Nervous System.														
Totals,	2,884	49	85	194	10	249	44	95	88	400	204	102	541	278
1. Cephalitis,	595	9	22	41	1	56	10	28	11	96	48	19	196	63
2. Apoplexy,	261	5	8	19	3	21	8	7	8	48	28	22	53	36
3. Paralysis,	487	21	17	45	3	59	8	25	11	95	38	40	61	64
4. Insanity,	106	-	4	4	-	12	2	-	31	18	5	3	9	18
5. Chorea,	4	-	1	1	-	-	-	-	-	-	-	-	2	-
6. Epilepsy,	113	3	8	14	1	7	3	18	7	17	10	2	16	13
7. Tetanus,	13	-	1	2	-	1	-	3	-	4	-	-	1	1
8. Convulsions,	465	5	13	47	2	68	9	10	7	69	53	5	124	58
9. Brain Diseases, &c.,	290	7	11	21	-	30	4	14	8	53	27	11	79	25
Totals,	871	19	25	53	8	182	30	44	29	153	76	36	165	101
III.—2. Organs of Circulation.														
Totals,														
1. Pericarditis,	20	-	-	-	-	-	2	-	1	1	1	-	13	2
2. Aneurism,	11	-	-	1	-	-	-	-	-	2	-	1	7	-
3. Heart Diseases, &c.,	840	19	25	52	8	182	28	44	28	150	75	85	145	99

TABLE IX.—Continued.

CAUSES OF DEATH.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
III.—3. Respiratory Organs.														
Totals,	2,024	19	78	143	4	208	33	72	67	427	157	61	490	265
1. Epistaxis,	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2. Laryngitis,	7	1	-	2	-	-	-	-	-	1	-	1	2	-
3. Bronchitis,	202	1	2	17	1	4	1	1	2	24	11	10	117	11
4. Pleurisy,	92	2	1	7	2	16	1	4	1	22	10	9	9	8
5. Pneumonia,	1,639	15	74	106	1	174	30	66	58	356	129	39	352	239
6. Asthma,	37	-	-	7	-	6	-	1	-	12	2	1	4	4
7. Lung Diseases, &c.,	47	-	1	4	-	8	1	-	6	12	5	1	6	3
Totals,	829	16	28	53	7	104	30	24	28	121	81	40	185	112
III.—4. Digestive Organs.														
1. Gastritis,	63	-	2	1	-	7	3	2	4	7	7	1	26	3
2. Enteritis,	240	3	15	9	-	26	14	12	8	42	25	10	30	46
3. Peritonitis,	65	-	-	3	2	2	1	-	1	9	2	-	40	5
4. Ascites,	17	-	-	-	-	-	-	-	-	5	3	-	9	-
5. Ulceration of Intestines,	28	1	1	1	1	2	2	1	1	1	2	8	7	3
6. Hernia,	30	1	-	3	1	3	2	1	1	6	2	1	6	3
7. Ileus,	68	3	-	8	2	7	2	3	1	13	7	2	3	17
8. Intussusception,	5	1	-	-	-	1	-	-	-	-	-	-	2	1
9. Stricture of Intestines,	1	-	-	-	-	-	-	-	-	-	1	-	-	-
10. Fistula,	2	-	-	-	-	-	-	-	-	-	-	-	2	-
11. Stomach Diseases, &c.,	88	3	8	8	-	16	2	-	4	11	7	1	21	7
12. Pancreas Disease, &c.,	1	-	-	-	-	-	-	-	-	-	-	-	-	-
13. Hepatitis,	53	1	3	2	-	6	1	-	1	5	7	4	19	4

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14. Jaundice,
15. Liver Disease, &c.,
16. Spleen Disease, &c.,

III.—5. Urinary Organs.

Totals,	222	4	7	20	1	26	5	8	3	82	18	10	61	30
1. Nephritis,	15	—	—	1	1	1	—	1	—	8	1	2	5	1
2. Ischuria,	3	—	—	2	—	—	—	—	—	—	—	1	—	—
3. Nephria, (Bright's Disease,)	34	1	1	1	—	4	—	—	—	5	1	—	19	2
4. Diabetes,	31	1	—	2	—	2	—	1	—	6	3	1	5	5
5. Calculus, (Stone, Gravel, &c.,)	20	1	3	1	—	3	—	—	—	—	2	1	8	6
6. Cystitis,	28	—	—	2	—	3	—	1	—	—	—	2	14	8
7. Kidney Diseases, &c.,	91	1	8	11	—	18	—	1	—	16	11	3	15	13

III.—6. Generative Organs.

Totals,	31	—	—	3	—	3	—	8	—	4	4	—	12	1
1. Ovarian Dropsy,	12	—	—	—	—	3	—	2	—	2	1	—	2	1
2. Disease of Uterus, &c.,	19	—	—	3	—	—	—	1	—	2	3	—	10	—

III.—7. Organs of Locomotion.

Totals,	83	—	3	6	—	5	—	—	3	17	4	6	24	14
1. Arthritis,	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2. Joint Disease, &c.,	83	—	3	6	—	5	—	—	3	17	4	6	24	14

III.—8. Integumentary System.

Totals,	75	3	5	5	1	3	4	2	14	5	2	28	6
1. Phlegmon,	54	2	3	4	—	2	2	1	12	4	2	16	4
2. Ulcer,	15	—	2	1	—	1	1	1	2	—	—	5	2
3. Skin Diseases, &c.,	6	1	—	—	1	—	—	—	—	—	—	2	—

CLASSIFICATION OF DEATHS.

TABLE IX.—Concluded.

CAUSES OF DEATH.	State.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
IV.—1. <i>Dev. Diseases of Children.</i>														
Totals,	2,686	53	82	170	9	397	24	151	42	498	247	94	681	298
1. Stillborn,	1,046	21	12	62	5	185	9	21	14	156	99	26	396	90
2. Infantile, Premature, &c.,	1,378	28	61	94	4	211	11	107	20	295	125	56	194	172
3. Cyanosis,	12	—	1	—	—	—	—	—	3	1	—	2	4	1
4. Spina Bifida,	8	—	1	—	—	—	—	—	—	2	2	—	4	1
5. Other Malformations,	22	1	—	—	—	2	—	—	—	2	2	—	14	1
6. Teething,	220	3	7	14	—	49	4	23	5	37	21	10	19	28
IV.—2. <i>Dev. Diseases of Adults.</i>														
Totals,	201	4	4	14	—	82	6	8	7	52	20	6	22	26
1. Paramenia,	5	—	1	—	—	1	1	—	—	—	—	—	1	1
2. Childbirth, (see also Metria,)	196	4	3	14	—	81	5	8	7	52	20	6	21	25
IV.—3. <i>Dev. Diseases of Old People.</i>														
1. Old Age,	1,358	39	53	99	10	207	30	80	41	288	142	92	98	179
IV.—4. <i>Diseases of Nutrition.</i>														
1. Atrophy and Debility,	133	—	9	11	19	5	4	5	2	15	2	9	43	9
V.—1. <i>Accident or Negligence.</i>														
Totals,	594	27	26	36	7	72	10	43	7	81	37	20	147	81
1. Fractures and Contusions,*	134	1	5	5	1	16	2	13	1	21	8	4	38	19
2. Burns and Scalds,	96	3	6	6	—	18	2	7	2	8	5	2	24	13

CLASSIFICATION OF DEATHS.

3. Poison,	24	1	8	14	6	26	4	13	17	12	4	1	3	8	27	6
4. Drowning,	223	20	11	2	—	—	—	1	8	—	87	13	7	89	27	6
5. Suffocation,	28	2	1	9	—	8	—	1	8	2	2	2	2	10	11	11
6. Otherwise,	90	—	—	—	—	—	—	—	—	—	9	8	2	33	—	—
	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—
V.—2. Battle.	11	1	—	—	—	—	—	—	—	—	1	—	1	5	8	8
V.—3. Homicide.	78	—	2	12	—	7	2	2	2	—	12	7	7	11	11	11
V.—4. Suicide.†	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
V.—5. Execution.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
V.—6. Violent Deaths, not classed.	296	5	15	19	2	31	6	13	6	6	52	36	9	68	34	34
Sudden, cause unknown,	18	2	—	2	—	4	—	1	1	1	8	2	—	—	8	8
Causes not specified,‡	560	12	29	82	2	88	6	49	16	125	55	22	81	48	48	48

• Including 94 by "Railroad Accidents."

† *Manner* not stated in the Returns.

NOTE.—Where a person is “found drowned,” and the coroner cannot ascertain whether the case is a suicide, murder, or purely accidental, the case is classed under “accident or negligence,” (V.; 4.) Cases of “neglect” and “cold,” except when the result of privation, (Class I.; 3; 1.) are classed with “Violent Deaths,” (V.; 6.) As “stricture of the urethra” is almost invariably the result of gonorrhoea, it is classed as (I.; 2; 2.)—[Dr. FARR.]

TABLE X.—CAUSES OF DEATH.—CLASSIFIED ARRANGEMENT.

NUMBERS AND PERCENTAGE.

Exhibiting the registered Number of Deaths from various specified causes (statistically classified) during the five years, 1862-66-64-65-66, separately and combined, and for the period of twenty-five years and eight months, ending with December 31, 1866;—also showing the Number of each Class, Order, and Disease, in each of the stated periods, to 100 Deaths from specified causes during such period.

[Still-births included.]

20,410 111,073	1,038 5,006	1,088 5,551	1,046 5,000	1,077 5,404	1,092 5,930	5,826 27,050	II.—1. Diabetic Diseases, 2. Tubercular Diseases,	4.08 20.78	4.40 21.92	8.89 19.58	8.68 19.43	4.10 20.74	4.53 22.11	4.39 24.00
87,598	2,042	2,241	2,557	2,883	2,884	11,557	Diseases of— I.—1. Nervous System, 2. Organs of Circulat'n, 3. Respiratory Organs, 4. Digestive Organs, 5. Urinary Organs, 6. Generative Organs, 7. Organs of Locomot'n, 8. Integumentary System	8.86	8.78	8.02	8.86	9.05	9.68	8.08
12,295	730	838	789	889	871	4,067		8.12	8.14	8.00	2.74	8.18	8.61	2.64
29,837	1,532	2,181	2,269	1,886	2,024	9,892		7.58	6.58	7.81	7.86	7.16	8.40	6.41
16,437	807	908	886	855	829	4,285		8.24	8.47	8.25	2.90	8.25	8.44	8.53
2,875	174	205	197	259	222	1,057		.81	.75	.74	.68	.98	.93	.62
814	89	86	45	40	81	191		.15	.17	.13	.16	.15	.13	.07
1,466	69	67	98	99	83	416		.82	.30	.24	.84	.87	.84	.82
1,590	46	65	80	74	75	840		.26	.29	.28	.28	.29	.31	.84
47,101	2,522	2,453	2,454	2,557	2,686	12,672	Developmental. Diseases of— IV.—1. Children,. 2. Adults, 3. Old People, 4. Nutrition,	9.71	10.85	8.78	8.51	9.71	11.14	10.11
8,905	149	157	169	160	201	836		.64	.64	.56	.59	.60	.83	.84
24,973	1,137	1,391	1,421	1,361	1,358	6,668		5.11	4.89	4.98	4.92	5.17	5.64	5.87
2,355	118	159	113	137	133	660		.51	.51	.57	.89	.52	.55	.51
9,802	493	553	650	494	594	2,784	V.—1. Accid't or Negligence, 2. Battle, 3. Homicide, 4. Suicide, 5. Execution, 6. Viol't D'ts, not clas'd,	2.13	2.12	1.98	2.25	1.87	2.47	2.00
1,246	298	244	634	61	1	1,238		.95	1.28	.87	2.20	.28	-	.27
299	18	24	10	27	11	90		.07	.08	.09	.03	.10	.05	.06
1,702	92	67	65	78	73	875		.29	.40	.24	.28	.30	.30	.37
6	1	-	-	-	-	1		-	-	-	-	-	-	-
5,695	290	269	303	270	296	1,428		1.09	1.25	.96	1.05	1.03	1.23	1.22
546	88	82	28	21	18	137	Sudden, (cause unascertain'd)	-	-	-	-	-	-	-
19,129	661	691	701	650	560	3,263	Causes not specified,*	-	-	-	-	-	-	-

* Including Stillborn.

I.—2. Euthetic.									
1. Syphilis,	159	17	88	87	35	31	37	14	07
2. Stricture of Urethra,	4	—	2	1	1	—	—	01	—
3. Hydrophobia,	9	—	—	1	1	—	—	—	—
4. Glanders, (& Mal. Pustule,)	17	8	3	2	5	4	2	01	—
I.—3. Dietic.									
1. Privation,	140	8	29	105	2	1	105	11	01
2. Purpura and Sourry,	78	8	9	27	13	16	27	03	03
3. Del. Trem., } Alcoholism,	195	14	26	49	61	45	49	10	06
4. Intemper'ce, }	338	29	86	98	101	79	98	14	12
I.—4. Parasitic.									
1. Thrush,	28	2	4	4	10	8	4	01	07
2. Worms,	87	15	13	26	20	13	26	05	09
II.—1. Diathetic.									
1. Gout,	9	1	—	3	2	3	3	—	01
2. Dropsy and Anæmia,	2,814	539	590	534	600	531	534	213	233
3. Cancer,	1,764	416	375	330	324	319	330	143	119
4. Noma, (Canker,)	527	96	100	98	109	129	98	38	65
5. Mortification,	212	40	42	36	53	41	36	16	21
II.—2. Tubercular.									
1. Scrofula,	717	110	149	154	152	152	154	57	53
2.	1,320	232	259	273	291	265	273	98	97
3.	22,930	4,600	4,661	4,738	4,667	4,269	4,738	17.69	20.51
4.	2,083	333	395	446	444	410	446	1.50	1.99

TABLE X.—Continued.

DEATHS.							PERCENTAGE.							
Twenty- five Years and Eight Mos. ending Dec. 31, 1866.	1862.	1863.	1864.	1865.	1866.	Five Yrs. 1862-66	CAUSES OF DEATH.	Five Yrs. 1862-66	1862.	1863.	1864.	1865.	1866.	Twenty- five Years and Eight Mos. ending Dec. 31, 1866.
III.—1. Nervous System.														
8,700	485	524	728	669	595	3,001	1. Cephalitis,	2.30	2.09	1.88	2.52	2.54	2.47	1.87
4,270	251	268	321	263	261	1,364	2. Apoplexy,	1.05	1.08	.96	1.11	1.00	1.08	.92
7,327	401	471	473	479	487	2,311	3. Paralysis,	1.77	1.73	1.68	1.64	1.82	2.02	1.57
1,060	66	62	64	75	106	373	4. Insanity, . . . . .	.29	.28	.22	.22	.29	.44	.23
34	1	5	1	3	4	14	5. Chorea, . . . . .	.01	—	.02	—	.01	.02	.01
8,015	143	161	166	106	113	689	6. Epilepsy, . . . . .	.53	.62	.58	.58	.40	.47	.65
268	17	9	11	11	13	61	7. Tetanus, . . . . .	.05	.07	.03	.04	.04	.05	.06
8,278	447	467	453	482	465	2,314	8. Convulsions,	1.77	1.92	.67	1.57	1.83	1.93	1.77
4,641	231	274	340	295	290	1,430	9. Brain Diseases, &c., . .	1.09	.99	.98	1.18	1.12	1.20	1.00
III.—2. Organs of Circulat'n.														
188	16	13	11	14	20	74	1. Pericarditis, . . . . .	.06	.07	.05	.04	.06	.08	.04
67	7	6	7	7	11	38	2. Aneurism, . . . . .	.03	.03	.02	.03	.02	.05	.01
12,040	707	819	771	818	840	3,955	3. Heart Diseases, &c., . .	3.03	3.04	2.93	2.67	3.10	3.48	2.59
III.—3. Respiratory Organs.														
7	2	—	3	2	—	7	1. Epistaxis,	—	—	—	.01	.01	—	—
156	7	11	14	15	7	54	2. Laryngitis, . . . . .	.04	.03	.04	.05	.05	.03	.03
1,796	185	197	194	179	202	957	3. Bronchitis, . . . . .	.74	.80	.70	.67	.69	.84	.39
2,502	102	128	143	88	92	553	4. Pleurisy, . . . . .	.42	.44	.46	.49	.33	.38	.54
23,565	1,140	1,724	1,801	1,493	1,639	7,797	5. Pneumonia,	5.98	4.90	6.17	6.24	5.67	6.80	5.06
652	44	58	53	58	37	250	6. Asthma, . . . . .	.19	.19	.21	.18	.22	.15	.14
1,159	52	63	61	51	47	274	7. Lung Diseases, &c., . .	.21	.22	.23	.21	.19	.20	.25

2,855	118	159	113	137	133	660	IV.—4. Dev. Dis. of Nutrit'n. 1. Atrophy and Debility, .	.51	.51	.57	.89	.52	.55	.51
9,302	82	84	141	136	134	577	V.—1. Accid't or Neglig'ce.* 1. Fractures and Contusions, .	.44	.35	.80	.49	.51	.56	2 00
	185	102	187	97	96	567	2. Burns and Scalds, .	.48	.58	.87	.48	.37	.40	
	24	29	26	19	24	122	3. Poison, .	.09	.10	.10	.09	.07	.10	
	197	276	283	186	222	1,164	4. Drowning, .	.90	.85	.99	.98	.71	.92	
	20	19	30	23	28	120	5. Suffocation, .	.09	.09	.07	.10	.09	.12	
	35	43	33	33	90	284	6. Otherwise, .	.18	.15	.15	.11	.12	.37	
1,246	298	244	634	61	1	1,238	V.—2. Battle.	.95	1.23	.87	2.20	.28	—	.27
299	18	24	10	27	11	90	V.—3. Homicide.	.07	.08	.09	.03	.10	.05	.06
1,702	92	67	65	78	73	375	V.—4. Suicide.†	.29	.40	.24	.23	.30	.30	.37
6	1	—	—	—	—	1	V.—5. Execution.	—	—	—	—	—	—	—
5,695	290	269	303	270	296	1,428	V.—6. Viol't D'ths, not clas'd.	1.09	1.25	.96	1.05	1.08	1.23	1.22
546	38	32	28	21	18	187	Sudden, cause unascertained,	—	—	—	—	—	—	—
19,132	661	691	701	650	563	3,266	Causes not specified, .	—	—	—	—	—	—	—

* Casualties of all kinds. † Totals; manner not stated.

NOTE.—The Percentages show the ratios of Deaths from each cause, to the Total Deaths from all SPECIFIED CAUSES. See, also, Note on page xcv.

TABLE XI.—OCCUPATIONS.

Distinguishing by Occupations (statistically classified) the Number, with their Average and Aggregate Ages. of Persons in the State (in two geographical divisions) whose Occupations were specified, and whose Deaths were registered, during the year 1866;—also in the State (entire) during the period of Twenty-three Years and Eight Months, ending with December 31, 1866.

[This Table includes only persons over twenty years of age.*]

OCCUPATIONS.	NINE EASTERN COUNTIES, 1866.			FIVE WESTERN COUNTIES, 1866.			WHOLE STATE, Twenty-three Years and Eight Mos. From May 1, 1843, to Dec. 31, 1866.		
	Number of Persons.	Ages.		Number of Persons.	Ages.		Number of Persons.	Ages.	
		Aggregate.	Average.		Aggregate.	Average.		Aggregate.	Average.
ALL CLASSES OF OCCUPATIONS, . . .	3,718	189,182	50.88	1,501	80,332	53.52	95,918	4,828,120	50.84
I. CULTIVATORS OF THE EARTH, . . .	562	37,417	66.57	541	85,055	64.80	22,764	1,461,288	64.40
II. ACTIVE MECHANICS ABROAD, . . .	286	15,612	54.59	68	8,962	58.26	6,893	851,855	51.04
III. ACTIVE MECHANICS IN SHOPS, . . .	482	22,410	46.49	195	9,314	47.76	9,898	474,399	47.93
IV. INACTIVE MECHANICS IN SHOPS, . . .	483	21,025	43.52	146	6,335	43.89	10,855	465,594	42.89
V. LABORERS—No SPECIAL TRADES, . . .	727	37,274	51.27	269	12,994	48.30	17,764	825,852	46.49
VI. FACTORS LABORING ABROAD, . . .	165	6,771	41.04	40	1,588	39.70	4,978	172,806	34.71
VII. EMPLOYED ON THE OCEAN, . . .	841	15,856	46.50	2	52	26.00	6,160	279,532	45.38
VIII. MERCHANTS, FINANCIERS, CAPITALISTS, . . .	460	22,679	49.30	124	5,853	47.20	9,220	445,410	48.26
IX. PROFESSIONAL MEN, . . .	140	7,284	52.03	61	3,298	54.07	3,316	166,953	50.35
X. FEMALES, . . .	72	2,854	39.65	55	1,881	34.20	4,070	184,431	45.31

I. CULTIVATORS OF THE EARTH,

II. ACTIVE MECHANICS ABROAD,

Brickmakers, . . .
 Carpenters, . . .
 Caulkers and Gravers, . . .
 Masons, . . .
 Millwrights, . . .
 Riggers, . . .
 Ship-carpenters, . . .
 Slaters, . . .
 Stonecutters, . . .
 Tanners, . . .

III. ACTIVE MECHANICS IN SHOPS,

Bakers, . . .
 Blacksmiths, . . .
 Brewers, . . .
 Cabinet-makers, . . .
 Calico-printers, . . .
 Card-makers, . . .
 Carriage-makers, . . .
 Chair-makers, . . .
 Clothiers, . . .
 Confectioners, . . .
 Cooks, . . .
 Coopers, . . .
 Coppermiths, . . .

	502	37,417	66.57	541	35,055	64.80	22,764	1,460,288	64.15
I. CULTIVATORS OF THE EARTH,									
II. ACTIVE MECHANICS ABROAD,	286	15,612	54.59	68	8,962	58.26	6,808	851,855	51.04
Brickmakers, . . .	5	228	44.60	1	34	34.00	65	8,161	48.63
Carpenters, . . .	140	7,583	54.16	46	2,666	57.96	3,852	197,284	51.20
Caulkers and Gravers, . . .	9	502	55.77	-	-	-	122	7,156	58.65
Masons, . . .	84	1,911	56.20	10	682	68.20	980	48,862	49.86
Millwrights, . . .	8	237	79.00	1	61	61.00	91	5,176	56.88
Riggers, . . .	2	71	35.00	-	-	-	113	5,780	60.00
Ship-carpenters, . . .	81	2,070	66.83	-	-	-	602	84,408	57.16
Slaters, . . .	5	182	36.40	1	32	32.00	23	868	87.74
Stonecutters, . . .	41	1,960	47.80	7	403	57.57	597	27,428	45.94
Tanners, . . .	16	873	54.56	2	84	42.00	448	21,782	48.62
III. ACTIVE MECHANICS IN SHOPS,	482	22,410	46.49	195	9,814	47.76	9,898	474,899	47.93
Bakers, . . .	15	740	49.33	1	53	53.00	302	18,823	45.77
Blacksmiths, . . .	50	2,889	47.48	24	1,334	55.58	1,655	87,203	52.69
Brewers, . . .	3	162	54.00	-	-	-	13	720	55.38
Cabinet-makers, . . .	27	1,412	52.29	2	99	49.50	493	24,086	48.75
Calico-printers, . . .	-	-	-	-	-	-	9	469	52.11
Card-makers, . . .	-	-	-	-	-	-	31	1,406	43.35
Carriage-makers, . . .	8	846	43.25	1	57	57.00	159	8,001	50.32
Chair-makers, . . .	1	84	84.00	8	378	46.62	70	2,963	42.33
Clothiers, . . .	-	-	-	1	80	80.00	63	3,687	56.94
Confectioners, . . .	3	111	37.00	-	-	-	40	1,619	40.47
Cooks, . . .	8	280	35.00	-	-	-	68	2,708	39.75
Coopers, . . .	24	1,393	58.04	2	106	53.00	647	38,278	59.16
Coppermiths, . . .	-	-	-	-	-	-	67	8,156	47.10

* Soldiers and females excepted.

TABLE XI—Continued.

OCCUPATIONS.	NINE EASTERN COUNTIES, 1866.				FIVE WESTERN COUNTIES, 1866.				WHOLE STATE, Twenty-three Years and Eight Mos. From May 1, 1843, to Dec. 31, 1866.			
	Number of Persons.		Area.		Number of Persons.		Area.		Number of Persons.		Area.	
			Aggregate.	Average.			Aggregate.	Average.			Aggregate.	Average.
Carriers,	5		361	45.12	4		241	60.25	109		4,755	43.62
Cutlery,	4		198	49.50	3		140	46.67	77		2,984	38.76
Distillers,	1		69	69.00	-		-	-	20		1,128	56.40
Dyers,	5		264	52.80	4		190	47.50	94		4,126	43.89
Founders,	17		788	46.05	11		886	86.09	187		8,856	44.66
Furnace-men,	5		828	66.50	-		-	-	69		2,944	42.67
Glass-blowers,	6		284	47.33	1		34	84.00	93		3,606	38.77
Gunsmiths,	-		-	-	2		78	39.00	221		10,538	47.68
Hatters,	13		625	48.07	3		202	67.33	258		14,135	54.79
Leather-dressers,	6		247	41.16	-		-	-	100		4,556	45.56
Machinists,	71		2,808	39.54	28		1,247	44.54	1,293		49,441	40.09
Millers,	7		388	55.42	3		109	56.33	188		10,896	58.68
Mus,	1		70	70.00	-		-	-	10		390	39.00
Nail,	10		488	48.80	-		-	-	114		4,460	39.18
Pail makers,	-		-	-	-		-	-	4		153	39.50
Painters,	48		1,957	40.77	14		568	40.57	1,028		47,173	46.10
Paper-makers,	5		243	48.60	4		266	66.50	186		8,779	47.20
Pianoforte-makers,	4		282	56.00	-		-	-	69		2,480	41.19
Plumbers,	9		288	32.00	-		-	-	58		2,102	36.24
Potters,	4		264	66.00	-		-	-	28		1,642	58.64
Pump and block-makers,	7		462	66.00	-		-	-	65		8,727	57.34
Reel-makers,	-		-	-	1		20	20.00	9		885	42.78
Rope-makers,	14		809	57.76	-		-	-	182		10,448	57.41
Tallow-chandlers,	-		-	-	-		-	-	48		2,001	54.19

Trunk-makers,	19	474	80.50	4	195	48.75	241	9,708	40.51
Upholsterers,	1	86	38.00	2	77	38.60	80	1,175	30.17
Weavers,	7	820	47.00	7	408	57.57	72	2,831	39.18
Wheelwrights,	17	776	45.61	8	555	59.87	261	11,874	45.49
Wood-turners,	10	556	56.80	1	68	68.00	839	19,957	53.56
Mechanics, (trade not specified,)	2	189	65.50	56	2,373	42.37	41	2,147	52.87
	49	2,065	42.04				814	36,833	43.64
IV. INACTIVE MECHANICS IN SHOPS,	488	21,025	43.52	146	6,883	43.89	10,855	465,594	42.89
Barbers,	4	125	81.25	2	88	44.00	220	9,218	41.90
	2	155	77.50	2	176	87.50	50	2,149	62.98
	8	848	42.87	2	79	39.50	89	3,421	38.44
	4	139	34.75	-	-	-	33	1,374	41.64
	7	292	41.71	-	-	-	46	1,557	31.85
	6	272	45.33	1	21	21.00	78	2,928	37.54
	7	280	40.00	2	147	73.50	62	3,593	57.00
	-	-	-	6	345	57.50	94	4,548	40.00
Engravers,	6	244	40.66	-	-	-	71	2,938	41.38
Glass-cutters,	1	48	48.00	-	-	-	39	1,711	43.87
Harness-makers,	9	507	56.33	5	305	61.00	260	12,523	48.17
Jewellers,	9	456	50.66	2	55	27.50	275	10,961	39.85
Operatives,	36	1,514	42.05	15	503	33.53	998	37,988	38.00
Printers,	28	1,190	42.50	4	143	35.75	441	16,824	38.15
Sail-makers,	4	269	67.25	-	-	-	139	7,241	52.09
Shoe-cutters,	28	1,250	44.64	2	128	64.00	190	7,766	40.87
Shoemakers,	270	11,205	41.50	85	3,505	41.23	6,606	285,887	40.12
Silversmiths,	6	324	54.00	-	-	-	57	2,590	45.44
Tailors,	46	2,284	49.86	10	495	49.50	926	41,293	44.50
Tobaccoists,	-	-	-	1	39	39.00	29	1,513	52.17
Whip-makers,	-	-	-	5	173	34.60	69	2,767	40.10
Wool-sorters,	2	123	61.50	2	134	67.00	83	3,904	45.88

TABLE XI.—Continued.

OCCUPATIONS.	NINE EASTERN COUNTIES, 1866.			FIVE WESTERN COUNTIES, 1866.			WHOLE STATE, Twenty-three Years and Eight Mos. From May 1, 1843, to Dec. 31, 1866.		
	Number of Persons.	Ages.		Number of Persons.	Ages.		Number of Persons.	Ages.	
		Aggregate.	Average.		Aggregate.	Average.		Aggregate.	Average.
V. LABORERS—No Special Trades,	727	37,274	51.27	269	12,994	48.30	17,764	825,852	46.49
Brakemen,	2	72	36.00	5	126	25.20	99	2,740	27.68
Chimney-sweepers,	—	—	—	—	—	—	3	118	39.38
Drivers,	9	308	34.22	3	116	38.67	167	6,551	39.28
Laborers,	694	35,871	51.68	259	12,637	48.79	17,266	806,934	46.74
Servants,	22	1,023	46.50	2	115	57.50	212	8,839	41.48
Workmen in powder-mills,	—	—	—	—	—	—	17	672	39.53
VI. FACTORS LABORING ABROAD,	165	6,771	41.04	40	1,588	39.70	4,978	172,806	34.71
Baggage-masters,	—	—	—	—	—	—	21	673	32.05
Butchers,	13	666	51.23	4	161	40.25	335	16,699	49.85
Drovers,	1	39	39.00	—	—	—	13	663	61.00
Engineers and Firemen,	24	828	34.50	3	138	46.00	256	9,433	36.85
Expressmen,	12	596	49.66	2	87	43.50	117	4,649	39.73
Fencing-masters,	—	—	—	—	—	—	3	122	40.66
Ferry-men,	2	118	59.00	—	—	—	8	444	55.50
Light-house keepers,	—	—	—	—	—	—	8	459	57.37
News Carriers,	—	—	—	1	36	36.00	11	444	40.40
Peddlers,	7	307	43.85	4	198	49.50	235	10,210	43.60
Sextons,	5	283	58.40	—	—	—	38	2,191	57.66
Upward and Constables,	9	448	58.40	2	81	40.50	59	3,270	55.42

Soldiers,	31	804	25.93	9	231	25.67	2,803	79,022	24.62
Stablers,	8	346	43.12	6	256	42.67	209	8,762	41.44
Stevadores,	3	161	53.66	-	-	-	50	2,685	53.70
Teamsters,	47	2,024	43.06	9	400	44.44	677	26,418	39.02
Watchmen,	8	162	50.66	-	-	-	100	4,764	47.64
Weighers and Gaugers,	-	-	-	-	-	-	16	975	60.94
Wharfingers,	-	-	-	-	-	-	19	898	46.70
VII. EMPLOYED ON THE OCEAN,	841	15,856	46.50	2	52	26.00	6,160	279,532	45.38
Fishermen,	10	531	53.10	-	-	-	191	7,635	39.95
Marines,	-	-	-	-	-	-	3	125	41.66
Naval Officers,	5	181	36.20	-	-	-	33	1,582	47.94
Pilots,	4	253	63.25	-	-	-	57	3,382	57.53
Seamen,	322	14,891	46.21	2	52	26.00	5,876	266,808	47.11
VIII. MERCHANTS, FINANCIERS, AGENTS, & CO.,	460	22,679	49.30	124	5,853	47.20	9,220	445,410	48.26
Agents,	14	648	46.28	3	189	46.38	105	5,026	47.87
Bankers,	-	-	-	3	203	67.67	24	1,317	54.46
Bank Officers,	3	186	62.00	1	76	76.00	79	4,338	54.91
Boarding-house keepers,	4	170	42.50	-	-	-	37	1,703	46.03
Booksellers,	1	34	34.00	-	-	-	55	2,777	50.49
Brokers,	8	493	61.62	-	-	-	116	5,583	48.13
Clerks,	104	3,464	33.30	32	927	28.97	1,755	60,275	34.34
Druggists,	10	367	36.70	3	144	48.00	132	5,380	40.76
Gentlemen,	53	3,752	70.58	9	526	58.44	977	64,705	66.23
Grocers,	13	575	44.28	7	355	50.71	258	12,391	48.03
Inn-keepers,	5	265	53.00	3	104	34.67	315	15,598	49.52
Manufacturers,	33	1,789	54.21	17	1,036	60.94	826	40,485	49.00
Merchants,	121	6,795	56.15	26	1,366	52.54	2,377	125,842	52.95

TABLE XI.—Concluded.

OCCUPATIONS.	NINE EASTERN COUNTIES, 1866.				FIVE WESTERN COUNTIES, 1866.				WHOLE STATE, Twenty-three Years and Eight Mos. From May 1, 1843, to Dec. 31, 1866.			
	Number of Persons.		Ave.		Number of Persons.		Ave.		Number of Persons.		Ave.	
			Aggregate.	Average.			Aggregate.	Average.			Aggregate.	Average.
Traders,	12	486	40 50	43 22	9	389	43 22	43 22	169	6,614	39 14	39 14
Conductors, Keepers,	4	170	42 50	38 00	1	38	38 00	38 00	138	5,787	41 98	41 98
.	-	-	-	46 00	1	46	46 00	46 00	9	882	42 44	42 44
.	-	-	-	-	-	-	-	-	12	600	50 00	50 00
.	75	3,485	46 46	56 00	9	504	56 00	56 00	1,886	86,607	47 14	47 14
IX. PROFESSIONAL MEN,	140	7,284	52 06	54 07	61	3,298	54 07	54 07	3,316	166,958	50 85	50 85
Architects,	1	44	44 00	-	-	-	-	-	6	282	47 00	47 00
Artists,	11	386	35 09	34 00	1	34	34 00	34 00	101	4,564	45 19	45 19
Civil Engineers,	2	102	51 00	-	-	-	-	-	65	2,728	41 89	41 89
Clergymen,	34	2,146	63 11	62 10	20	1,242	62 10	62 10	609	35,193	57 79	57 79
Comedians,	2	64	32 00	-	-	-	-	-	24	878	36 38	36 38
Dentists,	2	61	30 50	-	-	-	-	-	66	2,642	40 08	40 08
Editors,	3	90	30 00	-	-	-	-	-	41	1,819	44 37	44 37
Judges and Justices,	-	-	-	68 83	3	190	68 83	68 83	13	863	66 88	66 88
Lawyers,	11	555	50 45	53 00	6	318	53 00	53 00	445	25,023	56 21	56 21
Musicians,	16	526	32 87	46 88	3	189	46 88	46 88	165	6,560	39 76	39 76
Physicians,	23	1,471	63 95	56 57	14	792	56 57	56 57	820	45,794	55 84	55 84
Professors,	5	316	63 30	-	-	-	-	-	30	1,682	56 07	56 07
Public Officers,	16	1,008	63 00	50 57	7	354	50 57	50 57	307	16,646	54 22	54 22
Students,	5	124	24 80	21 00	4	84	21 00	21 00	202	4,754	23 53	23 53
Surveyors,	3	202	67 33	-	-	-	-	-	63	3,192	50 66	50 66
Teachers,	6	167	27 83	43 33	3	145	43 33	43 33	359	14,343	39 96	39 96

X. FEMALE.	73	2,854	39 05	55	1,881	84.20	4,070	164,481	45.81
Domestics,									
Dressmakers,	19	741	39.00	3	48	21.50	361	16,660	46.15
Housekeepers,	7	807	48.86	2	91	45.50	147	6,159	41.90
Milliners,	-	-	-	1	50	50.00	2,809	116,212	50.83
Nurses,	4	144	86.00	8	78	26.00	84	3,280	88.45
Operatives,	-	-	-	1	58	58.00	57	8,480	61.53
Seamstresses,	1	25	25.00	18	569	81.61	466	18,082	28.07
Shoe-binders,	12	544	45.88	8	858	44.75	195	8,932	45.81
Straw-braiders,	4	148	35.75	-	-	-	87	1,622	48.84
Straw-sewers,	1	78	78.00	-	-	-	29	1,122	88.69
Tailoresses,	8	105	85.00	6	180	21.67	26	880	81.92
Teachers,	9	421	47.78	8	185	45.00	154	6,954	45.16
	12	846	28.88	11	869	88.55	205	6,148	29.99

TABLE XII.—GENERAL ABSTRACT

Exhibiting the Number of Births, Marriages, and Deaths, registered in the 1856-66,—in connection with the Population, according to the State and of Persons who died ;—also showing the ratios of the annual average

THE STATE AND COUNTIES.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
MASSACHUSETTS,	1,267,031	368,578	188,978	178,318	1282	2.65	37
BARNSTABLE, . .	84,610	8,735	4,531	4,128	76	2.29	43
BERKSHIRE, . .	56,944	15,345	7,932	7,341	72	2.45	40
BRISTOL, . . .	89,395	27,217	14,045	12,996	176	2.77	36
DUKES, . . .	4,200	916	449	453	14	1.98	50
ESSEX, . . .	171,034	48,795	25,111	23,480	204	2.60	38
FRANKLIN, . .	31,340	7,779	3,929	3,794	56	2.26	44
HAMPDEN, . .	64,570	17,540	9,047	8,437	56	2.47	41
HAMPSHIRE, . .	39,269	10,028	5,146	4,840	42	2.33	43
MIDDLESEX, . .	220,384	65,666	33,491	31,918	257	2.71	36
NANTUCKET, . .	4,748	939	508	430	1	1.79	56
NORFOLK, . .	116,806	33,735	17,359	16,312	64	2.64	38
PLYMOUTH, . .	63,107	18,019	9,206	8,735	78	2.60	38
SUFFOLK, . . .	208,212	65,520	33,525	31,974	21	2.87	34
WORCESTER, . .	162,912	48,344	24,699	23,480	165	2.70	37

FOR THE ELEVEN YEARS—1856-66.

several Counties and Towns of Massachusetts, during the Eleven Years, Census of June 1, 1865,—distinguishing the Sex of Children Born number of Births, Marriages, and Deaths, to the given Population.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
131,367	·94	106	260,156	130,958	128,458	745	1·87	53
3,356	·88	113	6,470	3,384	3,050	36	1·70	58
5,219	·83	120	9,890	5,010	4,827	53	1·58	63
9,100	·93	107	19,248	9,718	9,470	60	1·96	51
411	·89	112	779	412	367	—	1·69	59
17,730	·94	106	34,545	17,091	17,325	129	1·83	54
2,821	·82	122	6,150	3,083	3,025	42	1·79	56
7,749	1·20	83	12,881	6,546	6,278	62	2·00	50
3,639	·84	119	7,839	3,820	3,931	88	1·81	55
20,889	·86	116	43,646	21,886	21,663	97	1·80	55
632	1·21	83	1,243	561	680	2	2·38	42
9,074	·71	141	20,791	10,307	10,429	55	1·63	62
5,611	·83	123	13,966	7,098	6,834	84	2·01	49
23,652	1·25	79	49,745	25,443	24,294	8	2·17	46
16,475	·92	109	32,963	16,599	16,285	79	1·84	54

TABLE XII.—*General Abstract*

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
BARNSTABLE Co.,	34,610	8,735	4,531	4,128	76	2.29	44
Barnstable, . . .	4,928	780	394	380	6	1.44	69
Brewster, . . .	1,456	370	185	167	18	2.31	43
Chatham, . . .	2,624	729	389	340	—	2.53	40
Dennis, . . .	3,592	988	486	500	—	2.50	40
Eastham, . . .	757	194	113	81	2	2.33	43
Falmouth, . . .	2,283	391	198	187	6	1.56	64
Harwich, . . .	3,540	1,072	590	479	3	2.75	36
Orleans, . . .	1,585	336	183	147	6	1.93	52
Provincetown, . . .	3,472	1,089	564	523	2	2.86	35
Sandwich, . . .	4,158	1,184	624	559	1	2.59	39
Truro, . . .	1,447	488	246	242	—	3.07	33
Wellfleet, . . .	2,296	516	242	247	27	2.04	49
Yarmouth, . . .	2,472	598	317	276	5	2.20	45
 BERKSHIRE COUNTY,	 56,944	 15,345	 7,932	 7,341	 72	 2.45	 41
Adams, . . .	8,298	2,472	1,337	1,129	6	2.71	37
Alford, . . .	461	97	52	45	—	1.92	52
Becket, . . .	1,393	465	247	217	1	3.04	33
Cheshire, . . .	1,650	356	181	174	1	1.96	51
Clarksburg, . . .	530	124	73	51	—	2.12	47
Dalton, . . .	1,137	305	163	142	—	2.44	41
Egremont, . . .	928	198	100	98	—	1.94	52
Florida, . . .	1,173	256	124	130	2	1.98	50
Great Barrington, . . .	3,920	1,084	532	551	1	2.52	40
Hancock, . . .	937	122	60	62	—	1.18	84
Hinsdale, . . .	1,517	420	210	200	10	2.52	40
Lanesborough, . . .	1,294	372	178	194	—	2.62	38
Lee, . . .	4,035	1,095	556	535	4	2.47	41
Lenox, . . .	1,680	540	293	246	1	2.96	34
Monterey, . . .	737	169	97	70	2	2.09	48
Mt. Washington, . . .	237	65	36	29	—	2.44	40
New Ashford, . . .	178	52	27	25	—	2.66	37
New Marlborough, . . .	1,649	450	221	229	—	2.48	40
Otis, . . .	956	219	129	90	—	2.08	48
Peru, . . .	494	87	51	36	—	1.60	62
Pittsfield, . . .	9,676	2,749	1,418	1,323	8	2.58	39
Richmond, . . .	944	202	91	109	2	1.95	51
Sandisfield, . . .	1,411	335	185	149	1	2.16	46
Savoy, . . .	866	206	109	96	1	2.16	46
Sheffield, . . .	2,459	752	406	344	2	2.78	36
Stockbridge, . . .	1,967	472	234	236	2	2.18	46
Tyringham, . . .	650	181	88	92	1	2.53	40

1866.]

GENERAL ABSTRACT.

CXV

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	RATIO.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
3,356	-88	113	6,470	3,384	3,050	86	1.70	59
457	-85	119	542	286	256	—	1.00	100
116	-72	138	238	105	131	2	1.48	67
255	-88	113	523	278	244	1	1.81	55
332	-84	119	635	347	286	2	1.61	62
70	-85	119	145	67	78	—	1.74	57
198	-79	127	431	225	206	—	1.72	58
485	1.25	80	700	367	326	7	1.80	56
155	-89	112	880	196	176	8	2.18	46
306	-96	10	733	386	346	1	1.92	52
387	-85	118	889	480	408	1	2.02	49
169	1.06	94	822	159	163	—	1.74	57
161	-64	157	440	225	204	11	1.81	55
205	-76	133	492	263	226	8	1.74	57
5,219	-83	120	9,890	5,010	4,827	53	1.58	63
820	-90	111	1,369	738	628	3	1.50	67
23	-45	220	67	31	36	—	1.32	76
83	-54	185	219	109	110	—	1.43	70
106	-58	171	188	93	94	1	1.04	97
41	-71	142	69	34	35	—	1.18	84
87	-70	144	209	97	111	1	1.67	60
85	-83	120	149	85	64	—	1.46	69
56	-43	230	115	65	50	—	.89	112
362	-84	119	698	357	341	—	1.62	62
26	-25	396	82	40	42	—	.80	13
127	-76	131	292	131	156	5	1.75	57
103	-72	138	219	124	91	4	1.54	65
533	1.20	83	893	431	460	2	2.01	50
97	-53	188	277	136	141	—	1.52	66
55	-68	147	155	79	76	—	1.91	52
12	-46	217	48	27	21	—	1.85	54
23	1.17	85	32	22	9	1	1.64	61
160	-88	113	346	178	167	1	1.91	52
91	-87	116	183	93	89	1	1.74	57
40	-74	136	70	28	42	—	1.29	78
1,196	1.12	890	1,609	802	787	20	1.51	66
36	-35	288	141	75	61	5	1.36	74
119	-73	130	226	112	110	4	1.46	69
86	-91	111	153	87	66	—	1.61	62
233	-86	116	570	274	296	—	2.11	47
166	-77	130	367	172	190	—	1.70	59
62	-87	115	153	77	76	—	2.14	47

TABLE XII.—General Abstract

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
<i>Berkshire—Con.</i>							
Washington, . . .	859	185	89	96	—	1.96	51
West Stockbridge, . .	1,620	558	304	254	—	3.13	82
Williamstown, . . .	2,555	669	293	358	18	2.38	42
Windsor, . . .	753	88	48	81	9	1.06	94
BRISTOL COUNTY, .	89,395	27,217	14,045	12,996	176	2.77	36
Acushnet, . . .	1,251	177	98	76	3	1.28	78
Attleborough, . . .	6,200	3,088	1,584	1,499	5	4.54	22
Berkeley, . . .	847	145	69	75	1	1.55	64
Dartmouth, . . .	8,485	881	458	422	1	2.33	43
Dighton, . . .	1,813	430	227	195	8	2.16	46
Easton, . . .	3,076	1,078	566	512	—	3.19	81
Fairhaven, . . .	2,547	830	423	406	1	2.97	84
Fall River, . . .	17,481	5,250	2,696	2,542	12	2.73	37
Freetown, . . .	1,485	377	207	164	6	2.30	43
Mansfield, . . .	2,180	514	241	263	10	2.20	46
New Bedford, . . .	20,853	5,858	3,014	2,785	109	2.56	39
Norton, . . .	1,709	413	229	183	1	2.20	46
Raynham, . . .	1,868	562	286	278	3	2.74	37
Rehoboth, . . .	1,843	888	200	186	2	1.92	52
Seekonk, . . .	928	444	232	211	1	4.37	23
Somerset, . . .	1,789	669	358	311	—	3.40	29
Swanzey, . . .	1,336	322	174	147	1	2.19	46
Taunton, . . .	16,005	4,897	2,287	2,158	7	2.50	40
Westport, . . .	2,799	693	373	316	4	2.25	44
DUKES COUNTY, .	4,200	916	449	453	14	1.98	50
Chilmark, . . .	548	146	75	68	3	2.43	41
Edgartown, . . .	1,846	897	187	202	8	1.96	51
Gosnold,* . . .	108	4	1	3	—	1.28	81
Tisbury, . . .	1,698	369	186	180	3	1.98	51
ESSEX COUNTY, .	171,034	48,795	25,111	23,480	204	2.60	39
Amesbury, . . .	4,181	1,193	611	569	13	2.60	39
Andover, . . .	5,814	1,357	697	660	—	2.32	43
Beverly, . . .	5,942	1,495	804	691	—	2.29	44
Boxford, . . .	868	189	104	85	—	1.98	51
Bradford, . . .	1,566	422	223	197	2	2.45	41
Danvers, . . .	5,144	1,621	788	829	4	2.87	35
Essex, . . .	1,680	482	257	214	11	2.70	37

* Three years only. Incorporated in 1864.

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GENERAL ABSTRACT.

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for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	Ratio.		Persons.	Sex.			Ratio.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
53	·56	178	134	62	72	—	1·42	71
89	·50	200	303	174	129	—	1·70	59
183	·65	154	479	231	244	4	1·71	59
66	·80	126	75	41	33	1	·91	110
9,109	·93	108	19,248	9,718	9,470	60	1·96	51
78	·57	176	172	78	94	—	1·25	80
474	·70	144	1,463	729	734	—	2·15	47
58	·63	161	177	92	83	2	1·90	53
331	·88	114	679	368	311	—	1·80	56
148	·75	135	280	141	138	1	1·40	71
206	·61	164	603	317	286	—	1·78	56
237	·85	118	607	322	285	—	2·15	46
1,728	·90	111	4,148	2,036	2,104	8	2·16	46
131	·81	125	318	155	160	8	1·95	51
177	·76	132	349	151	190	8	1·49	67
2,864	1·25	80	4,496	2,243	2,224	29	1·96	51
126	·67	149	325	159	166	—	1·78	58
119	·58	173	349	187	162	—	1·70	59
144	·71	141	407	204	203	—	2·00	50
136	1·33	75	305	133	172	—	2·99	33
103	·52	191	384	196	188	—	1·95	51
126	·86	117	209	107	102	—	1·42	70
1,590	·91	111	3,158	1,675	1,480	8	1·80	56
168	·55	183	457	236	215	6	1·49	67
411	·89	112	779	412	367	—	1·69	59
60	·99	100	91	42	49	—	1·51	66
178	·88	114	304	156	148	—	1·50	67
1	·31	324	2	1	1	—	·62	162
172	·93	108	382	213	169	—	2·05	49
17,730	·94	106	34,545	17,091	17,325	129	1·83	54
312	·68	147	735	353	381	1	1·60	63
439	·75	133	1,005	486	517	2	1·72	58
609	·93	107	1,165	570	595	—	1·78	56
70	·74	186	144	76	68	—	1·50	66
116	·68	149	287	137	150	—	1·67	60
447	·79	127	1,007	487	518	2	1·78	56
135	·76	183	343	176	165	2	1·92	52

TABLE XII.—*General Abstract*

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	Sex.			Ratio.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
<i>Essex—Con.</i>							
Georgetown, . . .	1,926	468	243	224	1	2.21	45
Gloucester, . . .	11,937	4,332	2,264	2,064	4	3.30	30
Groveland, . . .	1,619	358	177	181	—	2.01	50
Hamilton, . . .	799	175	81	92	2	1.99	50
Haverhill, . . .	10,740	2,950	1,492	1,455	3	2.50	40
Ipswich, . . .	3,311	705	358	347	—	1.94	52
Lawrence, . . .	21,698	6,554	3,349	3,200	5	2.75	36
Lynn, . . .	20,747	6,268	3,189	3,069	10	2.75	36
Lynnfield, . . .	725	172	89	83	—	2.16	46
Manchester, . . .	1,643	520	261	258	1	2.88	35
Marblehead, . . .	7,308	2,530	1,336	1,163	81	3.22	31
Methuen, . . .	2,576	615	317	298	—	2.17	46
Middleton, . . .	922	239	144	95	—	2.36	42
Nahant, . . .	313	110	53	57	—	3.19	31
Newbury, . . .	1,362	318	178	140	—	2.12	47
Newburyport, . . .	12,976	3,729	1,986	1,739	4	2.61	38
North Andover, . . .	2,622	596	305	291	—	2.07	48
Rockport, . . .	3,367	1,159	590	564	5	3.13	31
Rowley, . . .	1,191	306	140	144	22	2.34	43
Salem, . . .	21,189	4,924	2,532	2,377	15	2.11	47
Salisbury, . . .	3,609	859	432	427	—	2.16	46
Saugus, . . .	2,006	523	273	236	14	2.38	42
South Danvers, . . .	6,051	2,076	1,064	1,012	—	3.13	32
Swampscott, . . .	1,535	429	215	214	—	2.54	39
Topsfield, . . .	1,212	306	155	149	2	2.30	44
Wenham, . . .	918	263	129	130	4	2.61	38
West Newbury, . . .	2,087	502	275	226	1	2.19	46
FRANKLIN COUNTY, .							
	31,340	7,779	3,929	3,794	56	2.26	44
Ashfield, . . .	1,221	265	134	128	3	1.98	51
Bernardston, . . .	902	160	80	80	—	1.61	62
Buckland, . . .	1,922	644	370	274	—	3.05	33
Charlemont, . . .	994	192	81	108	—	1.76	57
Coleraine, . . .	1,726	888	181	205	2	2.04	49
Conway, . . .	1,538	407	188	203	16	2.41	42
Deerfield, . . .	3,038	1,020	510	509	1	3.06	33
Erving, . . .	576	142	68	74	—	2.24	45
Gill, . . .	635	131	64	67	—	1.88	53
Greenfield, . . .	3,211	968	511	455	2	2.75	36
Hawley, . . .	687	160	83	77	—	2.12	47
Heath, . . .	642	127	46	79	2	1.80	56
Leverett, . . .	914	171	106	65	—	1.70	59
Leyden, . . .	592	163	80	83	—	2.51	40
Monroe, . . .	191	57	25	32	—	2.72	37
Montague, . . .	1,574	306	159	147	—	1.77	57

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
124	·59	171	344	179	159	6	1·63	62
1,567	1·19	84	2,861	1,582	1,276	3	2·18	46
118	·67	151	305	141	160	4	1·72	58
69	·79	127	157	79	78	—	1·79	56
1,289	1·09	92	1,677	803	871	3	1·42	70
285	·79	128	616	289	327	—	1·69	59
2,791	1·17	86	4,640	2,280	2,315	45	1·94	51
1,835	·81	124	3,981	1,906	2,064	11	1·75	57
66	·83	121	159	79	79	1	1·99	50
131	·73	138	364	173	191	—	2·02	50
861	1·07	93	1,739	904	834	1	2·16	46
244	·86	116	441	219	221	1	1·56	64
58	·57	175	160	92	68	—	1·58	63
12	·35	287	56	31	25	—	1·63	61
111	·75	135	284	149	135	—	1·64	61
1,760	1·23	81	2,333	1,100	1,230	3	1·62	62
173	·60	167	405	203	198	4	1·40	71
384	1·04	96	714	373	337	4	1·93	52
120	·92	109	267	127	138	2	2·04	49
2,304	·88	101	4,936	2,399	2,526	11	2·12	47
363	·88	109	717	339	378	—	1·81	55
146	·66	151	380	196	165	19	1·72	58
370	·56	180	1,226	619	607	—	1·85	54
109	·65	155	291	143	148	—	1·72	58
106	·80	126	216	117	98	1	1·62	62
91	·91	111	180	91	86	3	1·78	56
115	·50	200	410	193	217	—	1·79	56
2,821	·82	122	6,150	3,083	3,025	42	1·79	56
85	·63	158	234	119	115	—	1·75	57
106	1·07	94	184	78	106	—	1·86	54
120	·57	176	388	207	176	5	1·84	54
84	·77	130	185	98	87	—	1·69	59
185	·98	103	325	157	168	—	1·71	58
180	1·06	94	339	163	167	9	2·00	50
198	·59	169	630	343	287	—	1·89	53
49	·78	129	109	58	50	1	1·72	58
76	1·09	92	116	55	61	—	1·66	60
447	1·27	79	661	337	315	9	1·67	53
58	·77	130	103	46	57	—	1·36	73
39	·55	181	114	59	55	—	1·62	62
62	·62	162	213	106	107	—	2·12	47
44	·68	148	111	61	50	—	1·71	59
29	1·39	72	31	17	14	—	1·48	68
112	·65	155	285	143	140	2	1·65	61

TABLE XII.—*General Abstract*

Counties and Towns.	Population. St. Census June 1, 1865.	MARRIAGES.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	'Births to 100 Persons living.	Persons living to one Birth.
<i>Franklin—Con.</i>							
New Salem, . . .	1,116	197	100	95	2	1.61	62
Northfield, . . .	1,660	392	194	174	24	2.15	47
Orange, . . .	1,909	353	171	179	3	1.68	59
Rowe, . . .	563	118	54	64	—	1.91	52
Shelburne . . .	1,564	442	221	221	—	2.57	39
Shutesbury, . . .	788	193	92	101	—	2.23	45
Sunderland, . . .	861	185	87	98	—	1.96	51
Warwick, . . .	901	207	108	98	1	2.09	48
Wendell, . . .	603	100	48	52	—	1.51	66
Whately, . . .	1,012	291	165	126	—	2.62	38
HAMPDEN COUNTY, .	64,570	17,540	9,047	8,487	56	2.47	41
Agawam, . . .	1,664	418	210	208	5	2.28	44
Blandford, . . .	1,087	239	118	120	1	1.99	50
Brimfield, . . .	1,316	275	136	138	1	1.90	53
Chester, . . .	1,266	214	107	107	—	1.54	65
Chicopee, . . .	7,577	2,215	1,129	1,084	2	2.66	38
Granville, . . .	1,367	328	156	171	1	2.18	46
Holland, . . .	368	107	58	49	—	2.64	38
Holyoke, . . .	5,648	1,677	877	797	3	2.66	38
Longmeadow, . . .	1,480	369	180	189	—	2.27	44
Ludlow, . . .	1,232	335	163	170	2	2.47	40
Monson, . . .	3,272	623	342	276	5	1.73	58
(State Almshouse,) . . .	—	227	107	120	—	—	—
Montgomery, . . .	853	90	51	39	—	2.32	43
Palmer, . . .	3,080	1,146	604	542	—	3.38	29
Russell, . . .	618	156	86	69	1	2.29	44
Southwick, . . .	1,155	243	127	115	1	1.91	52
Springfield, . . .	22,035	5,994	3,113	2,873	8	2.47	40
Tolland, . . .	511	118	65	52	1	2.10	48
Wales, . . .	696	127	71	56	—	1.66	60
Westfield, . . .	5,634	1,461	743	701	17	2.36	42
West Springfield, . . .	2,100	652	340	309	3	2.82	35
Wilbraham, . . .	2,111	526	264	257	5	2.27	44
HAMPSHIRE COUNTY, .	39,269	10,028	5,146	4,840	42	2.33	43
Amherst, . . .	3,415	765	390	375	—	2.04	49
Belchertown, . . .	2,636	554	311	241	2	1.91	52
Chesterfield, . . .	801	187	78	108	1	2.12	47
Cummington, . . .	980	237	119	118	—	2.20	45
Easthampton, . . .	2,869	515	267	245	3	1.63	61
Enfield, . . .	997	181	90	91	—	1.65	60
Goshen, . . .	411	91	54	36	1	2.02	50

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GENERAL ABSTRACT.

CXXI

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
102	.83	120	206	101	103	2	1.68	60
128	.70	143	319	153	157	9	1.75	57
172	.82	122	336	159	176	1	1.60	62
32	.52	194	92	50	42	—	1.49	67
155	.91	111	309	145	164	—	1.80	56
77	.89	113	158	76	81	1	1.83	55
58	.61	163	179	96	83	—	1.89	53
82	.83	121	176	78	95	3	1.78	56
68	.99	101	120	57	63	—	1.81	55
75	.68	148	227	121	106	—	2.04	49
7,749	1.20	83	12,881	6,546	6,273	62	2.00	50
131	.71	140	297	143	152	2	1.62	62
101	.85	118	216	116	98	2	1.81	55
110	.76	132	292	155	136	1	2.02	49
92	.66	151	155	86	69	—	1.11	90
1,545	1.85	54	1,744	872	871	1	2.09	48
111	.74	135	276	124	150	2	1.83	54
39	.96	104	88	44	41	3	2.17	46
1,131	1.82	55	835	429	404	2	1.85	74
124	.76	131	801	145	155	1	1.85	54
92	.68	147	209	95	105	9	1.54	65
217	.60	166	492	229	260	3	2.27	44
—	—	—	711	422	288	1	1.52	66
27	.69	144	88	39	49	—	1.78	56
414	1.22	82	516	264	249	3	1.52	66
54	.79	126	121	54	66	1	1.78	56
79	.62	161	222	116	105	1	1.75	57
2,497	1.03	97	3,974	2,060	1,912	2	1.64	61
28	.50	201	97	51	43	3	1.73	58
72	.94	106	125	63	60	—	1.63	61
587	.90	111	1,233	606	613	14	1.99	50
129	.56	179	479	232	243	4	2.07	48
169	.73	137	410	199	204	7	1.77	57
3,639	.84	119	7,839	3,820	3,931	88	1.81	55
302	.80	124	605	324	281	—	1.61	62
237	.82	122	489	233	243	13	1.69	59
82	.93	107	169	76	92	1	1.91	52
109	1.01	99	174	91	82	1	1.64	61
163	.52	194	448	212	233	3	1.42	70
83	.76	132	247	117	118	12	2.25	44
88	.84	119	96	50	45	1	2.15	47

TABLE XII.—*General Abstract*

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	Sex.			Ratio.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
<i>Hampshire—Con.</i>							
Granby, . . .	908	215	111	99	5	2.15	46
Greenwich, . . .	648	116	58	58	—	1.63	61
Hadley, . . .	2,246	615	301	310	4	2.48	40
Hatfield, . . .	1,405	465	235	229	1	3.01	33
Huntington, . . .	1,163	232	128	104	—	1.81	55
Middlefield, . . .	727	204	98	101	5	2.55	39
Northampton, . . .	7,925	2,489	1,292	1,193	4	2.86	35
Pelham, . . .	737	53	32	21	—	.65	153
Plainfield, . . .	579	108	56	50	2	1.70	59
Prescott, . . .	596	102	54	47	1	1.56	64
South Hadley, . . .	2,099	658	345	305	8	2.86	35
Southampton, . . .	1,216	293	152	139	2	2.19	46
Ware, . . .	3,374	929	465	463	1	2.50	40
Westhampton, . . .	636	181	89	90	2	2.59	39
Williamsburg, . . .	1,976	638	320	318	—	2.93	34
Worthington, . . .	925	200	101	99	—	1.97	51
MIDDLESEX COUNTY,	220,384	65,666	33,491	31,918	257	2.71	37
Acton, . . .	1,660	447	237	206	4	2.44	41
Arlington,* . . .	2,760	816	404	411	1	2.69	37
Ashby, . . .	1,080	200	92	107	1	1.68	59
Ashland, . . .	1,702	454	247	205	2	2.43	41
Bedford, . . .	820	215	118	97	—	2.39	42
Belmont, . . .	1,279	240	115	125	—	1.71	59
Billerica, . . .	1,808	388	191	197	—	1.95	51
Boxborough, . . .	454	92	41	50	1	1.85	54
Brighton, . . .	3,854	1,091	563	511	17	2.58	39
Burlington, . . .	594	146	83	63	—	2.24	45
Cambridge, . . .	29,112	9,766	5,012	4,715	39	3.06	33
Carlisle, . . .	642	159	76	83	—	2.25	44
Charlestown, . . .	26,399	7,719	3,980	3,735	4	2.66	38
Chelmsford, . . .	2,291	647	340	307	—	2.57	39
Concord, . . .	2,232	485	260	213	12	1.97	51
Dracut, . . .	1,905	545	280	265	—	2.60	38
Dunstable, . . .	533	65	40	25	—	1.11	90
Framingham, . . .	4,665	1,094	571	522	1	2.13	47
Groton, . . .	3,176	965	524	439	2	2.76	36
Holliston, . . .	3,125	886	473	410	3	2.58	39
Hopkinton, . . .	4,132	2,070	1,031	1,036	3	4.57	22
Hudson,† . . .	—	45	22	22	1	—	—
Lexington, . . .	2,220	576	273	303	—	2.36	42
Lincoln, . . .	711	182	91	91	—	4.37	23
Littleton, . . .	967	278	147	127	4	2.62	38
Lowell, . . .	30,990	9,406	4,689	4,662	55	2.76	36
Malden, . . .	6,840	1,855	978	874	3	2.46	41

* Name changed from West Cambridge.

† One year only. Incorporated in 1866.

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GENERAL ABSTRACT.

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for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
84	.84	119	173	77	90	6	1.73	58
61	.85	117	167	80	87	—	1.90	43
139	.58	178	491	230	254	7	1.99	50
66	.43	234	287	133	153	2	1.86	54
131	1.02	98	177	87	88	2	1.38	72
67	.84	119	109	53	56	—	1.36	73
827	.95	105	1,596	771	804	21	1.83	55
75	.92	108	102	49	53	—	1.26	80
65	1.02	98	120	50	70	—	1.88	53
55	.84	119	87	44	43	—	1.33	75
173	.75	133	424	213	204	7	1.83	55
86	.64	155	293	142	150	1	2.19	46
515	1.39	72	884	454	423	7	2.38	42
39	.56	179	137	62	75	—	1.96	51
168	.77	129	398	201	197	—	1.83	55
74	.91	110	166	71	90	5	1.67	61
20,869	.86	116	43,646	21,886	21,663	97	1.80	56
148	.81	123	332	192	139	1	1.82	55
163	.55	181	511	256	255	—	1.88	59
82	.69	145	255	130	124	1	2.05	47
128	.68	146	335	185	150	—	1.79	56
55	.61	164	172	86	84	2	1.91	52
48	.34	291	126	51	75	—	.90	112
111	.56	179	306	157	149	—	1.54	65
20	.40	249	74	30	42	2	1.48	67
182	.43	233	536	282	250	4	1.27	79
46	.70	142	100	42	58	—	1.53	65
2,874	.90	111	5,725	2,851	2,858	16	1.79	56
41	.58	172	181	65	66	—	1.86	54
2,755	.95	105	5,654	2,881	2,769	4	1.95	51
168	.67	150	371	203	168	—	1.47	68
181	.74	136	381	184	197	—	1.55	64
95	.45	221	337	157	179	1	1.61	62
20	.34	293	97	48	49	—	1.66	60
543	1.06	95	752	389	360	3	1.47	68
295	.85	118	661	337	323	1	1.89	53
213	.62	161	425	199	226	—	1.24	81
221	.49	206	595	298	297	—	1.31	76
20	—	—	22	11	11	—	—	—
134	.55	182	458	219	239	—	1.88	53
35	.45	223	110	48	62	—	1.41	71
83	.78	128	229	114	115	—	2.06	46
5,233	1.54	65	7,710	3,718	3,982	10	2.26	44
498	.66	151	975	496	474	5	1.30	77

TABLE XII.—General Abstract

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	Sex.			Ratio.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
<i>Middlesex—Con.</i>							
Marlborough, . . .	7,164	2,506	1,261	1,245	—	3.18	31
Medford, . . .	4,839	1,317	660	653	4	2.48	40
Melrose, . . .	2,865	712	351	351	10	2.26	44
Natick, . . .	5,208	2,148	1,073	1,066	9	3.76	27
Newton, . . .	8,975	2,413	1,213	1,200	—	2.44	41
North Reading, . . .	987	278	136	142	—	2.56	39
Pepperell, . . .	1,709	414	196	210	8	2.20	45
Reading, . . .	2,436	625	304	317	4	2.33	43
Sherborn, . . .	1,049	209	110	99	—	1.81	55
Shirley, . . .	1,217	355	189	166	—	2.65	38
Somerville, . . .	9,353	2,601	1,354	1,247	—	2.53	40
South Reading, . . .	3,244	796	400	394	2	2.23	45
Stoneham, . . .	3,298	946	485	461	—	2.61	38
Stow, . . .	1,537	434	232	200	2	2.57	39
Sudbury, . . .	1,703	387	188	198	1	2.07	48
Tewksbury, . . .	1,801	307	146	159	2	1.55	65
(State Almshouse,) . . .	—	733	375	358	—	—	—
Townsend, . . .	2,042	493	59	229	5	1.16	86
Tyngsborough, . . .	578	103	59	44	—	1.62	62
Waltham, . . .	6,896	1,843	932	900	11	2.43	41
Watertown, . . .	3,779	1,175	573	599	3	2.83	36
Wayland, . . .	1,137	265	133	132	—	2.12	47
Westford, . . .	1,568	403	197	183	23	2.34	43
Weston, . . .	1,231	192	100	92	—	1.42	71
Wilmington, . . .	850	222	93	115	14	2.38	42
Winchester, . . .	1,968	574	312	257	5	2.65	38
Woburn, . . .	6,999	2,383	1,282	1,100	1	3.10	32
 NANTUCKET COUNTY,	 4,748	 939	 508	 430	 1	 1.79	 56
 NORFOLK COUNTY, .	 116,306	 33,735	 17,359	 16,312	 64	 2.64	 38
Bellingham, . . .	1,240	291	162	129	—	2.13	47
Braintree, . . .	3,725	941	492	448	1	2.30	44
Brookline, . . .	5,262	1,527	837	673	17	2.64	38
Canton, . . .	3,318	1,051	522	526	3	2.88	35
Cohasset, . . .	2,048	548	293	253	2	2.43	41
Dedham, . . .	7,195	2,174	1,160	1,011	3	2.75	36
Dorchester, . . .	10,717	2,962	1,511	1,451	—	2.51	40
Dover, . . .	616	97	47	49	1	1.43	70
Foxborough, . . .	2,778	687	352	327	8	2.25	45
Franklin, . . .	2,510	513	249	264	—	1.86	54
Medfield, . . .	1,012	197	101	96	—	1.77	57
Medway, . . .	3,219	951	496	452	3	2.69	37
Milton, . . .	2,770	806	411	395	—	2.65	38
Needham, . . .	2,793	785	380	405	—	2.56	39

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GENERAL ABSTRACT.

CXXV

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
595	-76	132	966	477	488	1	1.23	82
657	1.23	81	768	330	435	3	1.44	69
207	-66	152	446	201	240	5	1.42	71
446	-78	128	990	525	468	2	1.73	58
493	-50	200	1,094	518	574	2	1.11	90
87	-81	125	183	99	84	-	1.69	59
142	-76	132	887	189	198	5	2.06	49
169	-63	159	512	266	245	1	1.91	52
88	-76	131	154	73	81	-	1.84	75
139	1.03	96	277	121	156	-	2.07	48
831	-32	311	1,622	818	803	1	1.58	63
294	-83	121	555	277	278	-	1.56	64
126	-35	288	649	340	309	-	1.79	56
125	-74	135	283	150	132	1	1.68	60
109	-58	172	275	147	128	-	1.47	68
80	-40	248	172	83	85	4	.87	115
-	-	-	2,087	1,164	873	-	-	-
178	-42	239	481	222	258	1	1.13	88
31	-49	205	141	71	70	-	2.22	45
532	-70	143	1,314	671	637	6	1.73	58
690	1.66	60	571	281	286	4	1.37	78
72	-58	174	197	105	92	-	1.58	63
128	-75	135	324	182	141	1	1.88	53
74	-55	183	162	77	85	-	1.20	84
79	-85	118	163	71	82	10	1.75	58
104	-48	208	260	132	128	-	1.20	83
516	-67	149	1,283	667	616	-	1.67	60
632	1.21	83	1,243	561	680	2	2.38	42
9,074	-71	141	20,791	10,307	10,429	55	1.63	62
86	-63	159	211	101	108	2	1.55	65
227	-55	181	606	299	307	-	1.48	68
498	-87	116	789	386	400	3	1.36	73
237	-65	154	671	324	345	2	2.74	37
200	-88	113	379	185	193	1	1.68	59
421	-53	188	1,349	737	611	1	1.71	59
692	-59	170	1,810	876	931	3	1.54	65
36	-53	188	101	53	48	-	1.49	67
255	-83	120	439	205	232	2	1.44	70
156	-56	177	365	151	213	1	1.33	75
94	-85	118	175	78	97	-	1.57	64
266	-75	133	660	334	325	1	1.87	54
173	-57	176	507	242	264	1	1.66	60
155	-50	198	453	229	224	-	1.47	68

TABLE XII.—General Abstract

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Norfolk—Con.							
Quincy,	6,718	2,186	1,100	1,083	3	2.96	34
Randolph,	5,734	1,949	992	956	1	3.09	32
Roxbury,	28,426	8,499	4,418	4,080	1	2.72	37
Sharon,	1,393	338	161	170	2	2.17	46
Stoughton,	4,855	1,828	939	887	2	3.42	29
Walpole,	2,018	474	243	227	4	2.13	47
West Roxbury,	6,912	1,633	826	807	—	2.15	47
Weymouth,	7,975	2,668	1,348	1,315	5	3.05	33
Wrentham,	3,072	635	319	308	8	3.01	53
PLYMOUTH COUNTY, 63,107 18,019 9,206 8,735 78 2.60 39							
Abington,	8,576	2,989	1,497	1,488	4	3.17	32
Bridgewater,	4,196	967	517	445	5	2.10	48
(State Almshouse,)	—	568	277	291	—	—	—
Carver,	1,059	224	130	94	—	1.92	52
Duxbury,	2,384	538	266	256	16	2.05	49
East Bridgewater,	2,976	828	420	403	—	2.52	40
Halifax,	722	151	72	77	2	1.90	53
Hanover,	1,545	380	185	195	—	2.17	46
Hanson,	1,196	316	165	151	—	2.40	42
Hingham,	4,176	1,032	542	487	3	2.25	45
Hull,	260	72	27	45	—	2.52	40
Kingston,	1,626	348	158	185	5	1.95	51
Lakeville,	1,110	286	147	139	—	2.35	43
Marion,	960	224	101	115	8	2.12	47
Marshfield,	1,809	407	228	178	1	2.05	49
Mattapoisett,	1,451	313	151	158	4	1.96	51
Middleborough,	4,565	1,014	508	505	1	2.02	50
North Bridgewater,	6,332	2,267	1,129	1,125	13	3.26	31
Pembroke,	1,489	413	215	198	—	2.53	40
Plymouth,	6,068	1,774	962	807	5	2.66	38
Plympton,	924	212	109	103	—	2.09	48
Rochester,	1,156	232	106	118	8	1.82	55
Scituate,	2,269	569	319	250	—	2.28	44
South Scituate,	1,635	376	201	174	1	2.09	48
Wareham,	2,798	1,057	530	525	2	3.44	29
West Bridgewater,	1,825	467	244	223	—	2.33	43
SUFFOLK COUNTY, 208,212 65,520 33,525 31,974 21 2.87 35							
Boston,	192,818	60,924	31,211	29,712	1	2.88	35
Chelsea,	14,403	4,263	2,138	2,109	16	2.70	37
North Chelsea,	858	213	111	98	4	2.26	44
Winthrop,	633	120	65	55	—	1.72	58

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
546	74	135	1,249	634	600	15	1.69	59
764	1 21	83	1,157	623	532	2	1.83	55
2,551	81	123	5,601	2,744	2,849	8	1.79	56
98	64	156	254	122	131	1.	1.66	60
387	72	138	917	475	433	9	1.72	58
136	61	163	867	161	206	—	1.65	61
221	29	344	752	352	399	1	.99	101
652	75	135	1,449	748	699	2	1.65	61
223	66	152	530	248	282	—	1.57	64
5,611	83	124	13,966	7,098	6,834	34	2.01	50
743	79	127	1,423	707	716	—	1.51	66
242	53	191	603	299	299	5	1.30	77
—	—	—	1,978	1,080	898	—	—	—
90	78	129	217	119	98	—	1.87	54
214	82	123	496	252	242	2	1.89	53
269	83	122	598	313	278	7	1.82	55
54	68	147	117	58	58	1	1.47	68
165	94	106	339	175	162	2	1.33	75
144	1.10	91	232	110	121	1	1.76	57
323	70	142	860	418	441	1	1.87	53
15	53	191	92	54	38	—	3 22	31
122	68	147	288	158	130	—	1.61	62
96	79	127	232	116	115	1	1.90	53
90	91	110	172	87	85	—	1 63	61
115	58	173	323	158	165	—	1.62	62
94	59	170	324	162	162	—	2.03	49
412	83	122	823	406	417	—	1.64	61
831	1.19	84	1,284	664	610	10	1.85	54
138	85	119	332	169	163	—	2.03	49
611	92	109	1,272	626	645	1	1.91	52
63	62	161	192	116	76	—	1.89	53
126	99	101	185	81	104	—	1.46	69
193	78	129	425	212	212	1	1.70	59
125	70	144	330	152	178	—	1.83	55
225	74	137	483	235	246	2	1.57	64
111	56	181	346	171	175	—	1.72	58
28,652	1.25	80	49,745	25,443	24,294	8	2.17	46
26,887	1.27	79	46,969	24,029	22,940	—	2.22	45
1,704	1.08	93	2,626	1,340	1,278	8	1.66	60
29	31	325	85	43	42	—	.90	111
32	46	218	65	31	34	—	.93	107

TABLE XII.—*General Abstract*

Counties and Towns,	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
WORCESTER COUNTY,	162,912	48,344	24,699	23,480	165	2.70	37
Ashburnham, . . .	2,153	577	295	268	14	2.44	41
Athol, . . .	2,814	532	272	254	6	1.72	58
Auburn, . . .	959	170	92	78	—	1.61	62
Barre, . . .	2,856	654	348	306	—	2.07	48
Berlin, . . .	1,061	315	163	152	—	2.70	37
Blackstone, . . .	4,857	1,846	929	915	2	3.46	29
Bolton, . . .	1,502	338	164	174	—	2.04	49
Boylston, . . .	792	172	78	93	1	1.97	51
Brookfield, . . .	2,101	660	332	328	—	2.86	35
Charlton, . . .	1,925	336	189	147	—	1.59	63
Clinton, . . .	4,021	1,485	763	714	8	3.36	30
Dana, . . .	789	156	83	66	7	1.80	56
Douglas, . . .	2,155	892	458	434	—	3.76	27
Dudley, . . .	2,076	566	292	274	—	2.48	40
Fitchburg, . . .	8,118	2,500	1,276	1,224	—	2.80	36
Gardner, . . .	2,553	796	398	398	—	2.83	35
Grafton, . . .	3,961	1,313	665	647	1	3.01	33
Hardwick, . . .	1,967	459	251	206	2	2.12	47
Harvard, . . .	1,355	168	89	98	1	1.26	79
Holden, . . .	1,846	370	183	187	—	1.82	55
Hubbardston, . . .	1,546	336	180	156	—	1.98	51
Lancaster, . . .	1,752	267	147	120	—	1.39	72
Leicester, . . .	2,527	679	371	308	—	2.44	41
Leominster, . . .	3,313	842	448	387	7	2.31	43
Lunenburg, . . .	1,167	249	130	119	—	1.94	52
Mendon, . . .	1,207	387	211	174	2	2.92	34
Milford, . . .	9,108	3,822	1,951	1,867	4	3.83	26
Millbury, . . .	3,780	1,221	627	592	2	2.93	34
New Braintree, . . .	752	162	80	77	5	1.96	51
Northborough, . . .	1,623	379	180	199	—	2.12	47
Northbridge, . . .	2,642	758	385	373	—	2.61	38
North Brookfield, . . .	2,514	806	429	374	3	2.94	34
Oakham, . . .	925	164	88	76	—	1.61	62
Oxford, . . .	2,713	813	403	407	3	2.72	37
Paxton, . . .	626	156	84	71	1	2.27	44
Petersham, . . .	1,428	286	155	131	—	1.82	55
Phillipston, . . .	725	173	92	80	1	2.17	46
Princeton, . . .	1,239	269	154	134	1	2.12	47
Royalston, . . .	1,441	301	155	143	3	1.90	53
Rutland, . . .	1,011	274	142	132	—	2.46	41
Shrewsbury, . . .	1,570	457	249	208	—	2.65	38
Southborough, . . .	1,750	550	266	284	—	2.86	35
Southbridge, . . .	4,131	1,073	554	515	4	2.36	42
Spencer, . . .	3,024	1,261	626	615	20	3.79	26
Sterling, . . .	1,668	341	177	157	7	1.86	54

for Eleven Years—Continued.

MARRIAGES.			DEATHS.					
Persons.	Ratio.							
	Marriages to 100 Persons.	Persons living to one Marriage.						
16,475	92	109	82,968	16,599	16,285	79	1-84	54
205	88	116	417	205	211	1	1-76	57
326	1-05	95	491	236	251	1	1-59	63
54	51	195	118	60	58	-	1-12	89
263	84	119	595	299	296	-	1-80	53
162	88	114	200	107	92	1	1-72	58
606	113	88	966	108	469	1	1-81	55
106	65	156	276	143	111	-	1-67	60
48	56	178	146	73	71	2	1-68	60
200	86	116	453	286	216	1	1-96	51
171	81	124	378	196	181	1	1-78	56
457	1-03	97	853	482	410	11	1-93	52
81	93	107	170	76	92	-	1-96	51
169	80	125	872	203	168	1	1-58	64
115	50	199	863	187	175	1	1-60	63
1,105	1-23	81	1,706	874	832	-	1-91	52
205	73	187	446	210	205	-	1-59	63
377	87	116	747	344	403	-	1-72	58
127	59	170	288	141	147	-	1-33	75
102	68	146	300	144	155	1	2-02	50
135	67	150	891	196	108	-	1-93	52
133	80	125	825	185	153	7	1-91	52
154	80	125	814	136	177	1	1-63	61
191	88	146	511	244	205	4	1-84	54
226	62	161	608	279	824	-	1-60	60
86	67	149	270	125	143	2	2-10	46
79	59	168	232	110	119	-	1-75	57
1,206	1-30	77	2,144	1,104	1,029	11	2-14	47
307	74	185	745	871	874	-	1-79	56
46	56	180	128	66	61	1	1-55	65
164	93	108	272	133	139	-	1-52	66
216	75	135	410	200	207	-	1-41	71
172	62	161	557	278	278	1	2-01	50
69	66	147	206	103	103	-	2-03	49
218	73	187	623	306	316	1	1-60	48
56	81	123	162	61	71	-	2-35	43
154	98	102	240	122	118	-	1-53	65
67	84	119	160	79	81	-	2-01	50
77	66	177	241	115	125	1	1-77	57
104	66	152	315	137	174	4	1-99	50
81	73	137	245	116	120	-	2-21	45
124	72	139	414	216	160	-	2-40	42
180	93	107	307	146	160	1	1-59	63
431	95	105	812	398	414	-	1-73	56
210	72	139	574	100	97	-	1-73	58
122	67	150	338	160	168	2	1-85	54

TABLE XII.—General Abstract

Counties and Towns.	Population. St. Census June 1, 1865.	BIRTHS.					
		Persons.	SEX.			RATIO.	
			Males.	Females.	Unk.	Births to 100 Persons living.	Persons living to one Birth.
Worcester—Con.							
Sturbridge, . . .	1,993	489	235	251	3	2.28	45
Sutton, . . .	2,863	681	345	335	1	2.62	38
Templeton, . . .	2,390	725	385	339	1	2.77	36
Upton, . . .	2,018	611	309	302	—	2.75	36
Uxbridge, . . .	2,838	898	431	458	9	2.88	35
Warren, . . .	2,180	699	355	344	—	2.92	34
Webster, . . .	3,608	1,020	518	500	2	2.57	39
Westborough, . . .	3,141	787	389	396	2	2.28	44
West Boylston, . . .	2,294	834	421	413	—	3.31	30
West Brookfield, . . .	1,549	412	206	204	2	2.42	41
Westminster, . . .	1,639	372	162	193	17	2.07	48
Winchendon, . . .	2,801	692	359	318	15	2.25	44
Worcester, . . .	30,055	9,753	4,980	4,765	8	2.95	34

for Eleven Years—Concluded.

MARRIAGES.			DEATHS.					
Persons.	RATIO.		Persons.	SEX.			RATIO.	
	Marriages to 100 Persons.	Persons living to one Marriage.		Males.	Females.	Unk.	Deaths to 100 Persons living.	Persons living to one Death.
154	·70	142	388	179	202	7	1·77	56
215	·83	121	507	263	239	—	1·95	51
268	1·02	98	516	253	263	—	1·96	51
155	·70	143	385	188	197	—	1·74	58
327	1·05	95	520	258	260	2	1·66	60
194	·81	124	373	196	176	1	1·55	64
574	1·45	69	649	318	330	1	1·63	61
217	·63	159	545	287	258	—	1·58	63
213	·85	118	422	205	217	—	1·67	60
121	·71	141	332	158	172	2	1·95	51
129	·71	140	337	174	159	4	1·87	53
275	·89	112	457	228	226	3	1·48	67
3,651	1·10	91	6,708	3,515	3,192	1	2·03	49

TABLE XIII.—BIRTHS.—ELEVEN YEARS —1856–66.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Children BORN ALIVE during the Eleven Years, 1856–66; also, for the entire State, the Percentage of the Numbers in each Month, (distinguishing Sex.) to the Total Number.

Year and Months.	SEX.	Percentage.	State.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
11 Years.	Totals,	100.00	368,578	8,735	15,345	27,217	1,855	48,795	7,779	17,540	10,028	65,666	33,735	18,019	65,520	48,344
	Males,	51.27	188,978	4,531	7,932	14,045	957	25,111	8,929	9,047	5,146	33,491	17,359	9,206	33,525	24,699
	Females,	48.38	178,318	4,128	7,341	12,996	883	23,480	8,794	8,437	4,840	31,918	16,312	8,735	31,974	23,480
	Unknown,	.35	1,282	76	72	176	15	204	56	56	42	257	64	78	21	165
Jan.	Totals,	7.59	28,005	631	1,057	2,156	154	3,672	540	1,250	735	4,715	2,498	1,378	5,506	3,713
	Males,	3.94	14,543	326	529	1,136	76	1,931	273	653	375	2,433	1,325	731	2,820	1,935
	Females,	3.63	13,389	303	525	1,010	78	1,732	261	593	358	2,265	1,167	646	2,685	1,766
	Unknown,	.02	73	2	3	10	—	9	6	4	2	17	6	1	1	12
Feb.	Totals,	7.19	26,515	589	1,101	2,085	121	3,434	565	1,172	731	4,659	2,309	1,318	5,074	3,357
	Males,	3.72	13,692	325	576	1,096	64	1,759	276	583	370	2,419	1,183	688	2,617	1,736
	Females,	3.46	12,769	262	523	980	57	1,661	287	588	353	2,235	1,123	630	2,457	1,613
	Unknown,	.01	54	2	2	9	—	14	2	1	8	5	3	—	—	8
March.	Totals,	8.27	30,472	597	1,305	2,426	155	3,861	580	1,377	841	5,513	2,609	1,543	5,727	3,938
	Males,	4.29	15,818	304	675	1,303	77	2,048	285	714	447	2,825	1,343	774	2,953	2,070
	Females,	3.96	14,577	291	627	1,106	77	1,795	293	660	391	2,677	1,262	763	2,772	1,863
	Unknown,	.02	77	2	3	17	1	18	2	3	3	11	4	6	2	5
April.	Totals,	7.74	28,528	559	1,216	2,047	156	3,725	575	1,292	758	5,075	2,588	1,541	5,164	3,832
	Males,	3.93	14,467	290	664	1,032	64	1,940	310	656	369	2,549	1,304	764	2,626	1,899
	Females,	3.79	13,985	269	549	998	91	1,776	260	633	388	2,512	1,281	772	2,536	1,920
	Unknown,	.02	76	—	3	17	1	9	5	3	1	14	3	5	2	13
May.	Totals,	7.88	29,039	532	1,326	2,103	170	3,822	605	1,306	789	5,155	2,688	1,341	5,246	3,950
	Males,	4.05	14,915	275	684	1,063	89	1,975	309	680	384	2,644	1,400	696	2,690	2,026
	Females,	3.81	14,052	254	634	1,031	79	1,839	294	620	402	2,502	1,286	638	2,556	1,917
	Unknown,	.02	72	3	8	9	2	8	2	6	3	9	2	7	—	13

June	Totals,	7.80	28,085	686	1,339	2,206	154	8,718	644	1,868	701	5,198	2,545	1,498	5,008	8,901
	Males,	4.03	14,878	303	664	1,100	72	1,916	324	744	401	2,660	1,285	763	2,557	2,029
	Females,	3.81	14,045	282	674	1,086	81	1,828	816	621	887	2,527	1,260	729	2,440	1,863
	Unknown,	.02	62	-	1	10	1	9	4	3	8	11	-	6	5	9
July	Totals,	8.63	81,818	707	1,318	2,281	158	4,184	712	1,504	919	5,758	2,825	1,562	5,458	4,387
	Males,	4.51	16,276	405	687	1,102	88	2,092	862	783	475	2,975	1,438	786	2,770	2,248
	Females,	4.20	15,461	388	627	1,102	75	2,082	847	720	443	2,765	1,384	759	2,687	2,182
	Unknown,	.02	76	4	4	17	-	10	3	1	1	18	8	7	1	7
Aug	Totals,	9.09	88,508	955	1,853	2,897	165	4,515	734	1,678	908	5,917	3,115	1,599	5,771	4,406
	Males,	4.65	17,126	500	672	1,217	97	2,328	375	842	481	8,047	1,650	836	2,910	2,176
	Females,	4.41	16,264	441	676	1,159	66	2,168	354	830	420	2,857	1,461	760	2,858	2,214
	Unknown,	.03	118	14	5	21	2	24	5	6	2	13	4	8	3	16
Sept	Totals,	8.92	92,867	1,041	1,344	2,372	164	4,466	730	1,618	875	5,809	3,037	1,602	5,517	4,292
	Males,	4.54	16,725	525	696	1,200	82	2,294	376	846	466	2,944	1,556	784	2,786	2,170
	Females,	4.85	16,041	506	639	1,162	80	2,158	349	767	407	2,850	1,474	809	2,730	2,110
	Unknown,	.03	101	10	9	10	2	14	5	5	2	15	7	9	11	12
Oct	Totals,	9.02	93,173	904	1,328	2,344	157	4,573	741	1,692	894	5,814	3,097	1,556	5,625	4,448
	Males,	4.58	16,861	459	695	1,207	97	2,257	368	867	486	2,927	1,588	803	2,882	2,280
	Females,	4.41	16,201	432	627	1,127	60	2,299	369	824	405	2,861	1,507	743	2,741	2,206
	Unknown,	.03	111	13	6	10	-	17	4	1	3	26	7	10	2	12
Nov.	Totals,	8.66	31,945	803	1,327	2,271	156	4,330	649	1,628	818	5,801	3,156	1,487	5,570	3,949
	Males,	4.50	16,598	437	706	1,173	80	2,288	328	824	406	2,954	1,639	790	2,933	2,040
	Females,	4.12	15,199	356	613	1,085	75	2,007	316	795	412	2,815	1,509	686	2,635	1,895
	Unknown,	.04	148	10	8	13	1	35	5	9	-	32	8	11	2	14
Dec.	Totals,	9.02	33,241	725	1,291	2,458	141	4,497	686	1,623	942	6,136	3,243	1,563	5,841	4,095
	Males,	4.58	16,894	376	666	1,267	76	2,279	339	837	472	3,079	1,640	770	2,973	2,120
	Females,	4.38	16,140	388	615	1,171	63	2,184	339	778	461	3,001	1,592	781	2,867	1,950
	Unknown,	.06	207	11	10	20	2	34	8	8	9	56	11	12	1	25
Not stat'd.	Totals,	.13	487	17	40	71	4	18	18	32	32	116	25	81	13	70
	Males,	.05	185	6	18	29	-	9	4	18	14	35	13	11	8	20
	Females,	.05	195	6	12	29	1	6	9	8	13	51	6	19	4	81
	Unknown,	.03	107	5	10	13	3	3	5	6	5	30	6	1	1	19

[Included in Tables XII. and XIII.]

Year and Months.	SEX.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.								
11 Years.	Totals, .	7,226	188	380	518	36	1034	157	886	228	1267	649	411	1058	920	
	Males, .	3,690	108	200	279	19	535	76	204	121	655	338	212	400	447	
	Fem., .	3,509	78	178	237	17	499	76	183	107	612	311	199	658	471	
	Unk., .	27	2	2	2	-	6	6	2	-	6	-	-	-	2	
Jan.	Totals, .	541	12	24	48	-	63	12	30	18	86	44	29	104	72	
	Males, .	273	5	13	25	-	34	4	17	8	39	27	17	49	35	
	Fem., .	266	7	11	23	-	28	8	11	10	47	17	12	55	37	
	Unk., .	2	-	-	-	-	-	-	2	-	-	-	-	-	-	
Feb.	Totals, .	483	8	24	36	6	54	10	20	10	84	40	36	78	68	
	Males, .	235	3	13	16	1	21	4	10	3	47	25	19	36	37	
	Fem., .	248	5	11	20	5	33	6	10	7	37	15	17	42	31	
March.	Totals, .	585	6	40	32	12	95	12	30	16	113	53	32	82	62	
	Males, .	285	3	19	18	6	44	5	13	10	58	26	13	39	31	
	Fem., .	295	1	21	14	6	48	7	17	6	55	27	19	43	31	
	Unk., .	5	2	-	-	-	3	-	-	-	-	-	-	-	-	
April.	Totals, .	641	12	36	40	6	92	18	22	10	122	61	30	105	77	
	Males, .	328	9	16	21	4	49	11	11	7	62	36	23	47	37	
	Fem., .	311	3	20	19	2	43	7	11	3	60	25	17	58	40	
	Unk., .	2	-	-	-	-	-	2	-	-	-	-	-	-	-	
May.	Totals, .	611	6	40	50	2	100	12	35	10	113	45	30	70	79	
	Males, .	331	4	23	28	-	50	5	26	5	54	25	23	40	44	
	Fem., .	280	2	17	22	2	41	7	9	11	59	20	17	30	35	
June.	Totals, .	570	16	40	46	-	82	10	40	18	104	50	36	74	70	
	Males, .	288	6	20	29	-	35	7	16	10	51	27	17	33	34	
	Fem., .	288	10	16	17	-	45	3	20	8	53	20	19	41	36	
	Unk., .	2	-	-	-	-	2	-	-	-	-	-	-	-	-	
July.	Totals, .	672	22	26	44	2	107	21	28	38	119	38	21	91	94	
	Males, .	345	14	12	20	1	57	15	17	17	55	18	23	41	53	
	Fem., .	327	8	14	22	1	50	6	11	21	64	20	21	50	39	
Aug.	Totals, .	646	20	32	40	2	80	14	44	34	94	53	26	111	92	
	Males, .	358	20	24	30	1	37	8	22	13	59	33	9	53	40	
	Fem., .	288	10	8	10	1	43	6	10	19	35	20	17	58	48	

SUPPLEMENT TO TABLE XIII.—Concluded.

Months.	SEX.	State.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
Sept.	Totals, .	579	30	36	46	4	76	18	40	12	94	58	30	64	71
	Males, .	294	17	17	25	4	47	9	21	8	49	28	18	27	24
	Fem., .	281	13	17	21	-	29	7	19	4	45	30	12	37	47
	Unk., .	4	-	2	-	-	-	2	-	-	-	-	-	-	-
Oct.	Totals, .	641	16	26	36	2	84	14	50	22	108	63	38	100	82
	Males, .	340	12	18	20	2	43	6	25	17	59	34	21	51	37
	Fem., .	297	4	13	16	-	41	8	25	5	47	29	17	49	43
	Unk., .	4	-	-	-	-	-	-	-	-	2	-	-	-	2
Nov.	Totals, .	557	16	34	46	-	94	4	28	16	92	68	24	56	79
	Males, .	255	6	16	25	-	41	2	9	8	47	30	9	31	31
	Fem., .	296	10	18	19	-	52	1	19	8	43	38	15	25	48
	Unk., .	6	-	-	2	-	1	1	-	-	2	-	-	-	-
Dec.	Totals, .	682	14	26	48	-	108	12	35	12	138	56	36	123	74
	Males, .	350	9	14	28	-	68	5	17	8	75	24	20	49	33
	Fem., .	330	5	12	20	-	40	7	18	4	61	32	16	74	41
	Unk., .	2	-	-	-	-	-	-	-	-	2	-	-	-	-
Not sta'd	Totals, .	10	-	-	2	-	-	-	-	6	-	2	-	-	-
	Males, .	8	-	-	1	-	-	-	-	5	-	2	-	-	-
	Fem., .	2	-	-	1	-	-	-	-	1	-	-	-	-	-

NOTE.—During the ELEVEN YEARS 1856-66, 34 cases of TRIPLETS occurred in this Commonwealth. Of these, one was in Franklin County; two, each, in Essex and Hampden; three in Plymouth; four in Middlesex; seven each in Norfolk and Worcester Counties: and eight in Suffolk County.

TABLE XIV.—STILLBORN.—ELEVEN YEARS—1856-66.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Stillbirths during the Eleven Years, 1856-66.

11 Yea	Males, .	Fem., .	Unk., .												
				61	65	338	36	111	45	80	48	808	379	108	2134
Jan.	Totals, .	53	49	192	22	866	35	57	43	525	256	70	1467	322	
	Males, .	39	31	196		172	19	28	15	164	67	20	161	74	
	Fem., .														
	Unk., .														
Feb.	Totals, .	10	9	58	0	100	5	11	10	115	78	11	301	71	
	Males, .	2	2	29	6	58	1	0	3	64	37	2	150	39	
	Fem., .		6	18	3	80	1	3	3	86	31	7	134	30	
	Unk., .	4	1	11	-	12	3	2	4	15	6	2	11	2	
March.	Totals, .	10	12	54	9	74	6	5	10	123	69	15	311	77	
	Males, .	2	6	30	4	40	2	3	3	70	31		161	42	
	Fem., .	6	5	15	4	11		2	3	43	25	9	121	33	
	Unk., .	2	1	9	1	10	2	-		10	3	2	9	2	
April.	Totals, .		7	53	1	96	12	14		116	64	15	348	87	
	Males, .	5	3	18	-	58	7	7	3	57	31		207	43	
	Fem., .	3	3	15	1	80	3	7	4	46	23	6	130	35	
	Unk., .	1	1	20	-	10	2	-	1	13	7	-	11	9	
May.	Totals, .	7	9	61		93	8	13	6	131	41	16	313	76	
	Males, .	2	6	26		53	2	6	6	85	24	14	170	44	
	Fem., .	3	3	12	-	11	5	6	-	31	15	2	126	27	
	Unk., .	2	1	23	-	14	1	1	-	15	2	-	17	5	
June.	Totals, .	8	18	49	5	96	10	9	5	138	53	9	343	88	
	Males, .	2	9	22	3	59	6	5	2	77	31	6	198	54	
	Fem., .	3	4	9	1	24	3	3	2	48	23	2	129	28	
	Unk., .		5	18	1	13	1	1	1	11	1	1	21	6	
July.	Totals, .	16	10	52	9	95	8	12	11	119	58	17	346	72	
	Males, .	6	6	22	5	52		5	5	59	31	7	199	38	
	Fem., .	3	4	13	1	29	4	5	6	54	19	6	120	24	
	Unk., .	2	-	17	3	14	1	2	-	6		4	27	10	
August.	Totals, .	12	10	60	6	99	9	11	7	120	54	18	308	65	
	Males, .	4	4	25	3	58	4	8		58	30	11	172	43	
	Fem., .	5	4	15	2	30		1	5	53	17		123	16	
	Unk., .	3	2	20	1	11	2	2	1	9	7	3	13	6	

TABLE XIV.—Concluded.

Month.	SEX.	STATE.	Barnstable.	Marblehead.	Bristol.	Dukes and Nantucket.	Essex.									Worcester.
Aug.	Totals, .	781	17	9	54	6	11	8	15	15	130	11	25	295	65	
	Males, .	424	12	4	22	2	42	1	9	7	71	11	11	176	11	
	Fem., .	284	3	2	17	4	11	2	4	6	47	16	9	112	27	
	Unk., .	73	2	3	16	-	11	-	2	2	12	6	2	7	6	
Sept.	Totals, .	746	11	10	68	3	11	4	11	11	128	51	13	284	11	
	Males, .	405	8	5	30	1	50	-	8	5	71	27	7	160	11	
	Fem., .	255	5	2	14	1	26	3	7	5	41	19	4	112	16	
	Unk., .	86	6	3	19	1	15	1	3	1	11	5	2	12	2	
Oct.	Totals, .	798	11	15	61	4	100	13	17	6	97	72	13	306	76	
	Males, .	422	9	6	11	2	50	7	7	1	53	11	5	171	37	
	Fem., .	306	5	4	18	2	41	5	7	4	31	25	7	125	32	
	Unk., .	70	4	5	9	-	9	1	3	1	13	7	1	10	7	
Nov.	Totals, .	607	11	15	74	3	115	11	10	10	138	52	13	288	68	
	Males, .	441	6	4	39	2	59	8	6	7	76	30	5	161	38	
	Fem., .	231	3	6	11	1	38	1	3	3	47	17	6	113	25	
	Unk., .	85	2	5	17	-	18	1	1	-	15	5	1	11	5	
Dec.	Totals, .	891	11	15	85	7	96	11	21	7	137	58	26	319	98	
	Males, .	111	3	9	40	4	53	4	9	5	66	30	17	188	52	
	Fem., .	312	5	4	27	2	33	3	9	2	17	23	8	122	27	
	Unk., .	99	1	2	18	1	10	4	3	-	24	5	1	9	14	
Not stated.	Totals, .	53	-	6	2	1	20	-	9	-	5	1	2	-	5	
	Males, .	10	-	2	1	-	-	-	1	-	1	-	2	-	3	
	Fem., .	9	-	2	1	-	-	-	-	-	1	3	-	-	2	
	Unk., .	34	-	2	-	1	20	-	8	-	3	-	-	-	-	

TABLE XV.—MARRIAGES.—ELEVEN YEARS—1856-66.

Distinguishing by Counties and by Months, the Number of Marriages registered during the Eleven Years, 1856-66.

YEAR AND MONTHS.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes & Nan- tuoket.	Essex.	Franklin.	Hamden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
ELEVEN YEARS,	131,261	3,356	5,220	9,109	940	17,730	2,821	7,749	3,639	20,888	9,074	5,611	28,652	16,472
January,	12,089	843	403	799	75	1,648	274	837	334	1,811	796	507	2,751	1,511
February,	9,610	229	405	575	61	1,178	166	705	212	1,586	643	379	2,326	1,145
March,	7,409	231	360	507	65	1,053	219	457	255	1,037	464	375	1,384	1,002
April,	11,016	244	405	705	49	1,354	249	680	320	1,864	793	414	2,382	1,557
May,	11,488	247	390	797	66	1,490	248	664	334	1,812	818	471	2,603	1,558
June,	10,423	196	318	782	74	1,423	223	525	292	1,731	786	453	2,327	1,293
July,	9,582	201	394	738	72	1,284	159	531	200	1,578	654	378	2,254	1,139
August,	9,245	182	380	631	96	1,244	141	480	235	1,546	668	366	2,209	1,117
September,	11,176	206	478	826	86	1,490	220	575	286	1,834	762	463	2,556	1,394
October,	12,279	261	549	837	123	1,612	243	680	347	1,971	892	473	2,801	1,490
November,	16,266	544	565	1,126	93	2,315	373	951	495	2,584	1,133	786	3,251	2,050
December,	10,170	464	410	784	77	1,586	248	635	306	1,461	668	541	1,805	1,185
Unknown,	508	8	213	2	3	53	58	29	23	73	2	5	3	86

TABLE XVI.—MARRIAGES.—ELEVEN YEARS—1856-66.

Exhibiting the Social Conditions and Ages of Parties Married during the Eleven Years, 1856-66.

AGGREGATE—Of all Conditions.

AGE OF MALES.	AGE OF FEMALES.														Unknown.
	ALL AGES.	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	
ALL AGES.	131,361	27775	58244	24902	8716	4381	2490	1327	71	9	264	120	43	10	1783
Und. 20,	2,378	1,602	689	63	15	-	-	-	-	-	-	-	-	-	9
20 to 25,	50457	17589	28327	8,931	404	65	-	2	-	-	-	-	-	-	130
25 to 30,	40007	6,606	20512	10947	1463	278	-	6	-	1	1	-	-	-	130
30 to 35,	15952	1,380	5,779	5,596	2492	499	1	9	-	1	1	-	-	-	62
35 to 40,	8,194	402	1,924	2,477	1940	1094	2	10	1	5	2	-	-	-	83
40 to 45,	4,545	100	608	1,057	1158	889	5	5	1	5	1	1	-	-	36
45 to 50,	3,267	89	244	533	723	757	5	15	1	6	5	2	-	-	16
50 to 55,	2,084	28	82	195	312	436	4	19	1	5	13	1	2	-	11
55 to 60,	1,262	7	41	66	133	220	2	2	1	0	26	4	2	-	10
60 to 65,	849	3	10	17	48	94	1	9	1	3	72	15	4	-	7
65 to 70,	476	2	1	7	18	32	1	10	1	9	71	42	7	1	6
70 to 75,	246	-	4	-	1	9	-	17	1	0	46	33	17	1	2
75 to 80,	94	-	-	2	1	2	-	9	-	2	23	14	10	4	1
Over 80,	80	-	-	2	1	2	-	2	-	2	2	8	1	4	1
Unk.,	1,400	17	28	9	7	4	-	2	-	-	1	-	-	-	1330

(A.) First Marriage of both Parties.

ALL AGES.	101,351	26302	52469	17894	5117	792	208	55	29	12	6	1	1	-	732
Und. 20,	2,322	1,592	657	56	10	-	-	-	-	-	-	-	-	-	7
20 to 25,	48423	17304	27420	8,817	245	26	1	-	1	-	-	-	-	-	109
25 to 30,	35116	6,081	18870	9,141	794	109	14	4	1	-	-	-	-	-	102
30 to 35,	10000	1,042	4,279	8,806	1291	152	15	1	1	-	-	-	-	-	36
35 to 40,	8,287	111	986	1,146	679	256	40	4	1	2	1	-	-	-	11
40 to 45,	1,043	89	216	274	279	155	66	12	2	1	-	-	-	-	19
45 to 50,	413	10	54	116	103	71	84	18	5	-	-	-	-	-	7
50 to 55,	153	4	12	24	34	33	11	9	8	6	1	-	1	-	-
55 to 60,	53	8	5	5	8	6	10	6	5	8	1	-	-	-	1
60 to 65,	14	-	1	1	1	-	4	2	2	-	2	-	-	-	-
65 to 70,	7	-	-	1	-	2	-	-	2	-	1	1	-	-	-
70 to 75,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
75 to 80,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Over 80,	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-
Unk.,	486	16	19	6	2	2	-	-	1	-	-	-	-	-	110

TABLE XVI.—Continued.

(B.) First Marriage of Male and subsequent Marriage of Female.

AGE OF MALES.	AGE OF FEMALES.														
	ALL AGES.	Under 20.	20 to 25.	25 to 30.	30 to 35.	35 to 40.	40 to 45.	45 to 50.	50 to 55.	55 to 60.	60 to 65.	65 to 70.	70 to 75.	75 to 80.	Unknown.
ALL AGES.	5,942	98	1,143	2,021	1,400	721	292	130	36	15	10	-	-	1	75
Und. 20.	41	3	50	5	5	-	-	-	-	-	-	-	-	-	-
20 to 25.	1,299	61	529	511	145	11	2	2	2	-	-	-	-	-	13
25 to 30.	1,937	24	381	877	464	140	26	11	2	1	1	-	-	-	11
30 to 35.	1,220	8	100	418	424	171	56	8	3	1	-	-	-	-	6
35 to 40.	692	1	49	130	226	106	57	23	2	1	1	-	-	-	6
40 to 45.	349	1	12	58	74	96	72	26	6	2	1	-	-	-	1
45 to 50.	207	-	9	14	42	55	11	11	6	5	1	-	-	-	-
50 to 55.	92	-	2	10	13	18	23	18	6	1	-	-	-	-	1
55 to 60.	37	-	-	2	2	7	5	11	5	2	2	-	-	-	1
60 to 65.	19	-	1	1	3	2	5	2	2	2	1	-	-	-	-
65 to 70.	6	-	-	-	-	-	2	-	2	-	2	-	-	-	-
70 to 75.	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
75 to 80.	2	-	-	-	-	-	-	-	-	-	-	-	-	1	1
Over 80.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unk.,	38	-	-	-	2	1	-	-	-	-	1	-	-	-	34

(C.) Subsequent Marriage of Male, but First Marriage of Female.

TABLE XVII.—DEATHS.—ELEVEN YEARS—1856-66.

Distinguishing by Counties, by Months, and by Sex, the registered Number of Persons who have died during the Eleven Years, 1856-66; also for the entire State, the Percentage of the Numbers in each Month, (distinguishing Sex,) to the Total Number.

Year and Months.	SEX.	Percentage.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
11 Years.	Totals,	100.00	260,166	6,470	9,890	19,248	2,022	34,545	6,160	12,881	7,839	43,646	20,791	13,966	49,745	32,968
	Males,	50.35	130,980	3,384	5,012	9,718	973	17,091	3,083	6,546	3,820	21,886	10,327	7,098	25,443	16,599
	Females,	49.37	128,441	3,050	4,825	9,470	1,047	17,325	3,085	6,273	3,931	21,663	10,409	6,834	24,294	16,285
	Unknown,	.28	745	36	53	60	2	129	42	62	88	97	55	34	8	79
Jan.	Totals,	7.95	20,678	519	773	1,508	186	2,815	477	949	635	3,418	1,597	1,127	4,064	2,610
	Males,	3.98	10,366	287	378	780	74	1,308	234	498	307	1,707	821	579	2,090	1,303
	Females,	3.94	10,244	228	392	724	112	1,485	242	448	326	1,696	770	545	1,973	1,303
	Unknown,	.03	68	4	3	4	-	22	1	3	2	15	6	3	1	4
Feb.	Totals,	7.33	19,070	434	776	1,369	152	2,543	431	859	617	3,258	1,533	1,046	3,672	2,380
	Males,	3.65	9,487	223	408	662	88	1,281	229	445	295	1,614	760	482	1,859	1,141
	Females,	3.66	9,526	210	366	701	64	1,247	199	413	316	1,637	770	560	1,813	1,230
	Unknown,	.02	57	1	2	6	-	15	3	1	6	7	3	4	-	9
March.	Totals,	8.29	21,574	522	829	1,521	170	2,863	487	1,136	711	3,569	1,690	1,240	4,164	2,672
	Males,	4.16	10,820	266	399	726	74	1,433	263	580	332	1,793	836	630	2,164	1,324
	Females,	4.11	10,699	252	424	790	96	1,421	222	552	371	1,771	851	607	1,998	1,344
	Unknown,	.02	55	4	6	5	-	9	2	4	8	5	3	3	2	4
April.	Totals,	7.84	20,402	505	798	1,495	176	2,646	467	967	628	3,418	1,643	1,102	3,992	2,565
	Males,	3.93	10,208	269	407	740	87	1,269	232	499	300	1,661	817	554	2,038	1,335
	Females,	3.90	10,150	234	390	754	88	1,370	234	464	324	1,750	821	547	1,953	1,221
	Unknown,	.01	44	2	1	1	1	7	1	4	4	7	5	1	1	9
May.	Totals,	7.54	19,615	428	828	1,421	181	2,567	475	887	598	3,314	1,532	1,144	3,790	2,450
	Males,	3.82	9,958	234	430	718	75	1,283	233	445	296	1,675	762	572	1,953	1,282
	Females,	3.70	9,611	192	395	698	106	1,273	238	441	298	1,631	766	570	1,837	1,166
	Unknown,	.02	46	2	3	5	-	11	4	1	4	8	4	2	-	2

Time	Totals,	17,782	414	636	1,283	126	2,351	416	849	493	3,036	1,400	937	3,422	2,322
	Males,	9,061	234	822	971	55	1,106	195	434	207	1,537	734	504	1,748	1,154
	Females,	8,686	209	810	609	71	1,174	214	406	226	1,408	730	480	1,674	1,165
	Unknown,	45	1	8	3	-	11	6	9	3	1	2	3	-	8
July.	Totals,	21,176	520	699	1,418	162	2,882	477	1,080	685	3,654	1,588	1,037	4,850	2,729
	Males,	10,936	253	355	729	94	1,477	256	559	321	1,837	769	568	2,286	1,432
	Females,	10,172	262	341	686	68	1,344	216	518	302	1,806	812	465	2,064	1,288
	Unknown,	68	5	3	3	-	11	5	8	12	11	2	4	-	9
Aug.	Totals,	28,597	681	1,066	2,118	176	3,718	711	1,590	897	4,766	2,806	1,890	5,486	3,692
	Males,	14,623	364	570	1,092	84	1,881	353	820	450	2,416	1,176	697	2,825	1,895
	Females,	13,892	316	492	1,013	92	1,828	357	758	436	2,342	1,126	688	2,659	1,785
	Unknown,	82	1	4	13	-	9	1	12	11	8	4	5	2	12
Sept.	Totals,	27,258	758	1,053	2,068	213	3,677	643	1,366	746	4,599	2,269	1,515	4,915	3,436
	Males,	13,662	388	531	1,093	103	1,813	311	668	360	2,288	1,127	752	2,518	1,710
	Females,	13,500	367	511	969	109	1,856	325	686	370	2,299	1,135	760	2,395	1,718
	Unknown,	96	3	11	6	1	8	7	12	16	12	7	3	2	8
Oct.	Totals,	22,952	643	898	1,776	163	3,122	551	1,164	700	3,882	1,857	1,180	4,018	2,998
	Males,	11,504	330	451	908	79	1,545	279	597	321	1,988	906	606	2,016	1,478
	Females,	11,380	307	445	866	84	1,568	270	562	366	1,884	944	571	2,002	1,511
	Unknown,	68	6	2	2	-	9	2	5	18	10	7	3	-	9
Nov.	Totals,	19,729	489	726	1,548	140	2,608	463	976	552	3,200	1,573	1,105	3,871	2,478
	Males,	9,713	247	357	763	72	1,286	227	484	273	1,590	731	567	1,946	1,220
	Females,	9,971	239	362	777	68	1,363	231	489	278	1,608	838	537	1,925	1,256
	Unknown,	45	3	7	8	-	9	5	3	1	2	4	1	-	2
Dec.	Totals,	20,873	474	783	1,683	173	2,728	532	1,006	577	3,477	1,711	1,123	4,001	2,605
	Males,	10,371	249	394	815	85	1,829	261	495	271	1,717	868	579	2,000	1,308
	Females,	10,458	225	386	865	88	1,391	267	511	301	1,753	836	543	2,001	1,291
	Unknown,	44	-	3	3	-	8	4	-	5	7	7	1	-	6
Not sta'd.	Totals,	460	53	26	40	4	75	31	52	47	55	31	20	-	26
	Males,	281	40	20	21	3	70	10	22	27	33	20	8	-	17
	Females,	152	9	11	18	1	5	20	25	17	18	10	11	-	7
	Unknown,	27	4	5	1	-	-	1	5	3	4	1	1	-	2

TABLE XVIII.—DEATHS.—ELEVEN YEARS—1856-66.

Distinguishing by Counties, by Age, and by Sex, the registered Number of Persons who have died during the Eleven Years, 1856-66; also for the entire State, the Percentage of the Numbers at each specified Age, (distinguishing Sex,) to the Total Number.

Age.	SEX.	Percentage.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Nantucket.	Essex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
All Ages.	Totals,	100.00	260,166	6,470	9,890	19,248	2,022	34,545	6,160	12,881	7,839	43,646	20,791	13,966	49,745	32,963
	Males,	50.35	130,980	3,384	5,012	9,718	973	17,091	3,083	6,546	3,820	21,886	10,327	7,098	25,443	16,599
	Females,	49.37	128,441	3,050	4,825	9,470	1,047	17,325	3,035	6,273	3,931	21,663	10,409	6,834	24,294	16,285
	Unknown,,	.28	745	36	53	60	2	129	42	62	88	97	55	34	8	79
Under 1.	Totals,	19.13	49,768	928	1,503	3,421	217	6,692	787	2,425	1,216	8,596	4,022	2,353	11,520	6,088
	Males,	10.38	27,008	498	823	1,896	111	3,618	424	1,314	663	4,746	2,152	1,262	6,142	3,359
	Females,	8.53	22,179	402	633	1,480	104	2,979	336	1,061	496	3,771	1,824	1,065	5,370	2,658
	Unknown,,	.22	581	28	47	45	2	95	27	50	57	79	46	26	8	71
1 to 2.	Totals,	8.21	21,359	414	598	1,535	69	2,769	320	1,037	449	3,671	1,772	883	5,192	2,650
	Males,	4.36	11,353	222	345	850	34	1,503	172	545	226	1,952	933	463	2,722	1,386
	Females,	3.83	9,961	189	251	676	35	1,259	147	488	215	1,714	838	416	2,470	1,263
	Unknown,,	.02	45	3	2	9	-	7	1	4	8	5	1	4	-	1
2 to 3.	Totals,	4.34	11,284	231	383	790	45	1,426	234	573	291	1,972	877	506	2,524	1,432
	Males,	2.26	5,861	110	202	437	21	744	116	298	152	1,018	417	271	1,324	751
	Females,	2.07	5,402	119	180	352	24	681	114	274	136	951	458	234	1,200	679
	Unknown,,	.01	21	2	1	1	-	1	4	1	3	3	2	1	-	2
3 to 4.	Totals,	2.87	7,474	169	285	545	32	1,028	180	391	192	1,261	654	379	1,510	898
	Males,	1.46	3,785	89	151	269	17	538	70	183	101	633	333	184	755	462
	Females,	1.41	3,679	79	134	276	15	489	59	208	88	626	320	194	755	436
	Unknown,,	-	10	1	-	-	-	1	1	-	3	2	1	1	-	-

DEATHS.

1924	{	Totals,	2.10	6,470	112	205	438	87	783	100	800	185	889	452	240	1,101	724
		Males,	1.05	2,758	61	100	208	20	884	50	148	68	447	280	122	547	362
		Females,	1.05	2,722	51	105	235	17	849	49	150	67	441	222	124	554	362
		Unknown,	-	4	-	-	-	-	-	1	2	-	1	-	-	-	-
1925	{	Totals,	36.65	95,864	1,854	2,974	6,724	400	12,648	1,577	4,732	2,283	16,389	7,777	4,867	21,847	11,792
		Males,	19.51	50,760	980	1,621	8,660	208	6,787	538	2,488	1,210	8,796	4,065	2,302	11,490	6,320
		Females,	16.80	43,943	840	1,803	8,009	195	5,757	705	2,187	1,002	7,503	3,662	2,093	10,349	5,398
		Unknown,	.25	661	34	50	55	2	104	84	57	71	90	50	32	8	74
1926	{	Totals,	4.92	12,805	809	537	1,028	107	1,697	289	680	391	2,227	1,096	639	2,143	1,667
		Males,	2.50	6,507	170	259	511	50	847	170	360	195	1,154	550	806	1,111	824
		Females,	2.42	6,290	139	278	511	57	850	118	319	192	1,073	545	833	1,032	843
		Unknown,	-	8	-	-	1	-	-	1	1	4	-	1	-	-	-
1927	{	Totals,	2.21	5,756	159	805	487	44	791	162	310	189	903	461	316	808	821
		Males,	1.07	2,785	83	148	237	22	357	75	157	91	435	223	146	424	387
		Females,	1.14	2,969	76	157	250	22	433	87	153	98	468	238	170	884	433
		Unknown,	-	2	-	-	-	-	1	-	-	-	-	-	-	-	1
1928	{	Totals,	3.86	10,037	313	471	715	61	1,391	272	511	344	1,689	724	527	1,573	1,446
		Males,	1.81	4,697	180	223	325	39	594	131	229	149	755	353	250	758	711
		Females,	2.05	5,335	133	247	390	22	797	140	282	193	934	370	277	815	735
		Unknown,	-	5	-	1	-	-	-	1	-	2	-	1	-	-	-
1929	{	Totals,	10.69	27,834	765	960	1,925	198	3,877	659	1,329	809	4,692	2,035	1,510	5,527	3,548
		Males,	5.10	13,284	398	432	926	100	1,845	306	632	381	2,107	1,009	792	2,661	1,695
		Females,	5.59	14,547	367	528	999	98	2,031	352	696	428	2,585	1,026	718	2,866	1,853
		Unknown,	-	3	-	-	-	-	1	1	-	-	-	-	-	-	-
1930	{	Totals,	8.64	22,481	514	808	1,526	141	2,827	463	1,043	624	3,879	1,746	1,149	5,166	2,595
		Males,	4.13	10,734	278	378	718	65	1,367	204	485	252	1,793	815	572	2,603	1,204
		Females,	4.51	11,747	236	430	808	76	1,460	259	558	372	2,086	931	577	2,563	1,391

TABLE XVIII.—Concluded.

Age.	SEX.	Percentage.	STATE.	Barnstable.	Berkshire.	Bristol.	Dukes and Kentucket.	Fessex.	Franklin.	Hampden.	Hampshire.	Middlesex.	Norfolk.	Plymouth.	Suffolk.	Worcester.
20 to 30	Totals,	6.82	17,747	393	629	1,342	144	2,131	390	874	489	2,974	1,388	873	4,087	2,033
	Males,	3.60	9,366	217	311	704	67	1,095	185	475	216	1,566	701	452	2,326	1,051
	Females,	3.22	8,381	176	318	638	77	1,036	205	399	273	1,408	687	421	1,761	982
30 to 60	Totals,	6.19	16,098	400	654	1,218	150	2,041	439	786	508	2,741	1,286	828	3,011	2,036
	Males,	3.30	8,584	217	345	638	75	1,077	210	418	263	1,476	655	463	1,674	1,073
	Females,	2.89	7,512	183	309	580	75	964	229	368	244	1,265	631	365	1,337	962
	Unknown,	-	2	2	-	-	-	-	-	-	1	-	-	-	-	1
30 to 40	Totals,	6.80	17,675	471	840	1,384	196	2,302	582	908	669	2,900	1,411	1,150	2,556	2,306
	Males,	3.45	8,973	261	466	692	103	1,159	296	484	333	1,449	692	604	1,263	1,171
	Females,	3.35	8,702	210	374	692	93	1,143	286	424	336	1,451	719	546	1,293	1,135
40 to 80	Totals,	7.11	18,503	688	912	1,472	278	2,574	677	936	781	2,828	1,509	1,397	1,909	2,542
	Males,	3.33	8,663	326	455	682	137	1,127	358	468	394	1,304	713	669	775	1,255
	Females,	3.78	9,838	362	457	790	141	1,447	319	467	387	1,523	796	728	1,134	1,287
	Unknown,	-	2	-	-	-	-	-	-	1	-	1	-	-	-	-
30 to 40	Totals,	4.47	11,624	429	533	998	245	1,709	446	547	469	1,764	993	908	902	1,681
	Males,	1.85	4,805	195	258	419	92	616	215	244	205	755	389	405	303	709
	Females,	2.62	6,819	234	275	579	153	1,093	231	303	264	1,009	604	503	599	972
30 to 40	Totals,	.86	2,231	75	115	212	47	292	103	90	88	326	102	169	188	334
	Males,	.29	761	28	46	80	15	82	53	34	40	113	61	53	47	109
	Females,	.57	1,470	47	69	132	32	210	50	56	48	218	131	116	141	225

APPENDIX.

L A W S

CONCERNING THE REGISTRATION OF BIRTHS, MARRIAGES AND DEATHS.

[General Statutes—Chapter 21.]

OF THE REGISTRY AND RETURNS OF BIRTHS, MARRIAGES, AND DEATHS.

SECTION

1. City and Town Clerks to obtain, record, and index facts concerning Births, Marriages, and Deaths.
2. Parents and others to give notice of Births, and Deaths.
3. Physicians to give Certificate of Cause of Death, when requested. Penalty.
4. Sextons, Undertakers, &c., to make returns to Clerks of Cities and Towns. Clerks to give Certificate of Registry of Death to the Person having charge of funeral rites *preliminary* to Interment, for delivery, &c. If Interment takes place without such Certificate, notice thereof to be given, under penalty of twenty dollars.
5. Clerk annually to transmit certified Copies of Records to Secretary.

SECTION

6. Record or Certificate of Clerk to be *prima facie* evidence in Legal Proceedings.
7. Clerks—Fees of, payable by City or Town; Accounts of, to be certified by Secretary. Penalty for neglect of duty.
8. Superintendents of State Almshouses to record and return to Secretary, births and deaths therein.
9. Secretary to furnish Blank Books for Records and Forms for returns, with Instructions. Clerks to distribute the Blank Forms for Returns.
10. Secretary,—to cause Returns to be bound, &c.; to Report annually to Legislature, &c.; to do all other acts necessary to secure the execution of the provisions of this chapter.
11. Registrars may be chosen, in certain cases, in place of Town Clerks.

SECTION 1. The clerk of each city and town shall receive or obtain, and record, and index, the following facts concerning the births, marriages, and deaths, therein, separately numbering and recording the same in the order in which he receives them, designated in separate columns:

In the record of births, the date of the birth, the place of birth, the name of the child, (if it have any,) the sex and color of the child, the names and the places of birth of the parents, the occupation of the father, the residence of the parents, and the date of the record;

In the record of marriages, the date of the marriage, the place of marriage, the name, residence and official station of the person by whom married, the names and places of birth of the parties, the residence of each, the age and color of each, the condition of each, (whether single or widowed,) the occupation, the names of the parents, and the date of the record;

In the record of deaths, the date of the death, the name of the deceased, the sex, the color, the condition, (whether single, widowed, or married,) the age, the residence, the occupation, the place of death, the place of birth, the names and places of birth of the parents, the disease or cause of death, the place of burial, and the date of the record.

SECTION 2. Parents shall give notice to the clerk of their city or town of the births and deaths of their children; every householder shall give like notice of every birth and death happening in his house; the eldest person next of kin shall give such notice of the death of his kindred; the

keeper of a workhouse, house of correction, prison, hospital, or almshouse, except the State almshouses at Tewksbury, Bridgewater, and Monson, and the master or other commanding officer of any ship shall give like notice of every birth and death happening among the persons under his charge. Whoever neglects to give such notice for the space of six months after a birth or death, shall forfeit a sum not exceeding five dollars.

SECTION 3. Any physician having attended a person during his last illness, shall—when requested within fifteen days after the decease of such person—forthwith furnish for registration a certificate of the duration of the last sickness, the disease of which the person died, and the date of his decease, as nearly as he can state the same. If any physician refuses or neglects to make such certificate, he shall forfeit and pay the sum of ten dollars to the use of the town in which he resides.

SECTION 4. Every sexton, undertaker, or other person having charge of a burial-ground, or the superintendent of burials having charge of the obsequies or funeral rites preliminary to the interment of a human body, shall forthwith obtain and return to the clerk of the city or town in which the deceased resided or the death occurred, the facts required by this chapter to be recorded by said officer concerning the deceased, and the person making such return shall receive from his city or town the fee of ten cents therefor.

The clerk, upon recording such facts, shall forthwith give to the person making such return, a certificate that such return has been made, which certificate such person shall deliver to the person having charge of the interment, if other than himself, before the burial when practicable, otherwise within seven days thereafter. When a burial takes place and no certificate is delivered as aforesaid, the sexton, undertaker, or other person having charge of the interment, shall forthwith give notice thereof to the clerk under penalty of twenty dollars.

SECTION 5. The clerk of each city and town shall annually on or before the first day of February, transmit to the secretary of the Commonwealth, certified copies of the records of the births, marriages, and deaths, which have occurred therein during the year ending on the last day of the preceding December.

SECTION 6. The record of the town clerk relative to any birth, marriage, or death, shall be *prima facie* evidence, in legal proceedings, of the facts recorded. The certificate signed by the town clerk for the time being shall be admissible as evidence of any such record.

SECTION 7.* The clerk shall receive from his city or town for obtaining, recording, indexing, and returning to the secretary of the Commonwealth, the facts in relation to a birth, twenty cents ; a marriage, ten cents ; a death, twenty cents for each of the first twenty entries, and ten cents for each subsequent entry, as the same shall be certified by the secretary of the Commonwealth ; but a city or town containing more than ten thousand inhabitants may limit the aggregate compensation allowed to their clerk. He shall forfeit a sum not less than twenty nor more than one hundred dollars for each refusal or neglect to perform any duty required of him by this chapter.

SECTION 8. The superintendents of the State almshouses at Tewksbury, Bridgewater, and Monson, shall obtain, record, and make return of,

* See chap. 188, on p. cliv, following.

the facts in relation to the births and deaths which occur in their respective institutions, in like manner as is required of town clerks. The clerks of said towns shall, in relation to the births and deaths of persons in said almshouses, be exempt from the duties otherwise required of them by this chapter.

SECTION 9. The secretary shall, at the expense of the Commonwealth, prepare and furnish to the clerks of the several cities and towns, and to the superintendents of the State almshouses, blank books of suitable quality and size to be used as books of record under this chapter, blank books for indexes thereto, and blank forms for returns, on paper of uniform size; and shall accompany the same with such instructions and explanations as may be necessary and useful. City and town clerks shall make such distribution of blank forms of returns furnished by the secretary as he shall direct.

SECTION 10. The secretary shall cause the returns received by him for each year to be bound together in one or more volumes with indexes thereto. He shall prepare from the returns such tabular results as will render them of practical utility, make report thereof annually to the legislature, and do all other acts necessary to carry into effect the provisions of this chapter.

SECTION 11. Any city or town containing more than ten thousand inhabitants, may choose a person other than the clerk to be registrar, who shall be sworn, and to whom all the provisions of this chapter concerning clerks shall apply. The returns and notices required to be made and given to clerks shall be made and given to such registrar under like penalties.

SECTION 12. The secretary of this Commonwealth shall prosecute, by an action of tort, in the name of the Commonwealth, for the recovery of any penalty or forfeiture imposed by this chapter.

SECTION 13. Any city or town may make rules and regulations to enforce the provisions of this chapter, or to secure a more perfect registration of births, marriages, and deaths, therein.

[General Statutes—Chapter 106.]

OF MARRIAGE.

SECTION

7. Notice of Intention of Marriage to be entered with Town Clerk.
8. Certificate of Record of Intention to be given to Parties by Clerk. Such certificate to be delivered to Person before whom Marriage is to be solemnized.
9. Certificate not to issue to certain Minors, except on application of Parent, &c. Penalty.
10. Clerk may require Affidavit of Age.
11. Penalty for making False Statement.
12. Parties living in State and Married out of it, to file certificate on return. Penalty.
13. No Person to solemnize Marriage of a Minor, without consent of Parents, if any in the State competent to act.

SECTION

14. Marriages, by Whom to be solemnized, and in what Place.
15. Marriages among Quakers.
16. Persons solemnizing Marriage to keep Record and to make Returns to certain Town Clerks. Clerk to record all Marriages so returned.
17. Penalty for not making Returns.
18. Penalty for solemnizing a Marriage unlawfully.
19. Penalty, on Person not authorized to Marry.
21. Record of Marriage, or certified copy thereof, presumptive evidence of Marriage.

SECTIONS 1, 2 and 3. [Marriage between certain relatives prohibited.]

SECTION 4. [Polygamy forbidden.]

SECTION 5. [Marriage contracted by insane persons or idiots, void.]

SECTION 6. [Marriages of persons marrying out of the State in order to evade, &c., void.]

SECTION 7. Persons intending to be joined in marriage, shall, before their marriage cause notice thereof to be entered in the office of the clerk, or registrar of the city or town in which they respectively dwell, if within the State. If there is no such clerk or registrar in the place of their residence, the entry shall be made in an adjoining city or town.

SECTION 8. The clerk or registrar shall deliver to the parties a certificate under his hand, specifying the time when notice of the intention of marriage was entered with him, together with all facts in relation to the marriage required by law to be ascertained and recorded, except those respecting the person by whom the marriage is to be solemnized. Such certificate shall be delivered to the minister or magistrate in whose presence the marriage is to be contracted, before he proceeds to solemnize the same.

SECTION 9. If a clerk or registrar issues such certificate to a male under the age of twenty-one years, or a female under the age of eighteen years, having reasonable cause to suppose the person to be under such age, except upon the application or consent in writing of the parent, master, or guardian, of such person, he shall forfeit a sum not exceeding one hundred dollars; but if there is no parent, master, or guardian, in this State, competent to act, a certificate may be issued without such application or consent.

SECTION 10. The clerk or registrar may require of any person applying for such certificate, an affidavit sworn to before a justice of the peace for the county where the application is made, setting forth the age of the parties; which affidavit shall be sufficient proof of age to authorize the issuing of the certificate.

SECTION 11. Whoever applying for such certificate wilfully makes a false statement in relation to the age or residence, parent, master, or guardian, of either of the parties intending marriage, shall forfeit a sum not exceeding two hundred dollars.

SECTION 12. When a marriage is solemnized in another State between parties living in this State, and they return to dwell here, they shall, within seven days after their return, file with the clerk or registrar of the city or town, where either of them lived at the time, a certificate or declaration of their marriage, including the facts concerning marriages required by law, and for every neglect they shall forfeit ten dollars.

SECTION 13. No magistrate or minister shall solemnize a marriage, having reasonable cause to suppose either of the parties to be under the age mentioned in section nine, without the consent of the parent or guardian having the custody of the minor, if there is any in the State competent to act.

SECTION 14. Marriages may be solemnized by a justice of the peace in the county for which he is appointed, when either of the parties resides in the same county; and throughout the State by any minister of the gospel ordained according to the usage of his denomination, who resides within the State and continues to perform the functions of his office; but all marriages shall be solemnized in the city or town in which the person solemnizing them resides, or in which one or both of the persons to be married reside.

SECTION 15. Marriages among the people called Friends or Quakers may be solemnized in the manner heretofore used and practised in their societies.

SECTION 16. Every justice of the peace, minister, and clerk, or keeper of the records of the meeting wherein any marriages among the Friends or Quakers are solemnized, shall make a record of each marriage solemnized before him, together with all facts relating to the marriage required by law

to be recorded. He shall also between the first and tenth days of each month return a copy of the record for the month next preceding, to the clerk or registrar of the city or town in which the marriage was solemnized, and shall when neither of the parties to a marriage resides in the city or town in which the marriage is solemnized, return a copy of the record of such marriage to the clerk or registrar of the city or town in which one or both of said parties reside. All marriages so returned shall be recorded by the clerk or registrar.

SECTION 17. Every person neglecting to make the returns required by the preceding section, shall forfeit for each neglect not less than twenty nor more than one hundred dollars.

SECTION 18. A justice of the peace or minister who joins persons in marriage contrary to the provisions of this chapter, knowing that the marriage is not duly authorized, shall forfeit not less than fifty nor more than one hundred dollars.

SECTION 19. Whoever undertakes to join persons in marriage knowing that he is not authorized so to do, shall be imprisoned in the jail or confined to hard labor for a term not exceeding six months, or pay a fine of not less than fifty nor more than two hundred dollars.

SECTION 20. [Unintentional informality does not invalidate marriage in other respects lawful.]

SECTION 21. The record of a marriage, made and kept as prescribed by law by the person before whom the marriage is solemnized, or by the clerk or registrar of any city or town, or a copy of such record duly certified, shall be received in all courts and places as presumptive evidence of such marriage.

SECTION 22. [Admission of respondent, general repute, &c., competent evidence to prove the fact of marriage.]

SECTION 23. [Marriage in foreign countries by a consul or diplomatic agent valid, and certificate of such consul or agent presumptive evidence thereof.]

[General Statutes—Chapter 29.]

OF THE PUBLIC RECORDS.

SECTION 10. [County, city and town records and files may be inspected and copied.]

SECTION 13. [Penalties; for altering or mutilating any record, paper, or written document, a sum not exceeding fifty dollars, —for wrongfully detaining records, and other documents, fifty dollars.]

[General Statutes—Section 1 of Chapter 174.]

Sentence when no punishment is provided.

SECTION 1. In cases of legal conviction, where no punishment is provided by statute, the court shall award such sentence as is conformable to the common usage and practice in this State, according to the nature of the offence, and not repugnant to the constitution.

[Chapter 138.]

AN ACT CONCERNING THE REGISTRY AND RETURN OF MARRIAGES, BIRTHS
AND DEATHS.

SECTION 1. The clerk of each city and town, (except in such cities and towns as choose a registrar, under the eleventh section of the twenty-first chapter of the General Statutes, in which cases the provisions of this act shall apply to the registrar,) for receiving or obtaining, recording, indexing, and returning the facts relating to marriages, births and deaths occurring therein, shall be entitled to receive therefrom the sums following, viz. : for each marriage, fifteen cents ; for each birth, thirty cents ; for each death returned to him by the persons specified in sections two, three and four of chapter twenty-one of the General Statutes, twenty cents for each of the first twenty entries, and ten cents for each subsequent entry ; for each death not so returned, but by him obtained and recorded, twenty cents.

SECTION 2. Chapter ninety-six of the acts of the year eighteen hundred and sixty-five, and so much of section seven of the twenty-first chapter of the General Statutes as is inconsistent herewith, are hereby repealed.

SECTION 3. This act shall take effect upon its passage.

[Approved April 7, 1866.]

STATISTICAL NOSOLOGY

ADOPTED FOR REGISTRATION IN MASSACHUSETTS.

The following plan of a Nomenclature and Classification of Diseases does not essentially differ from that authorized by the Registrar-General of England, to be used in the preparation of the "Weekly Return of Births and Deaths in London," and is also, with slight modifications, identical with that embodied in a report drawn up by William Farr, Esq., M. D., of London, for the consideration of the International Statistical Congress which met at Paris in September, 1855; which report was printed in the Appendix to the Sixteenth Registration Report of the Registrar-General, England.

[NOTE —This page and those that follow contain two lists of causes of death. The first,—that on the left side,—may be called the TABULAR LIST, and comprises all the heads which it is proposed to admit into the complete tables (IX. and X.) and under which ALL deaths, from whatever cause are finally distributed. It represents those diseases which, under the same terms, or terms strictly synonymous with them, are found in practice to occur most frequently.

The SUPPLEMENTAL LIST is *subordinate* to the first, and contains the principal *special* diseases which it may be considered desirable to note. The figures in this list indicate the corresponding heads of the tabular list under which such diseases are ultimately arranged

Table VIII. includes both the Tabular and Supplementary lists; Tables IX. and X. the Tabular list only.]

CAUSES OF DEATH.

TABULAR LIST.		SUPPLEMENTAL LIST.	
CLASS I. ZYMOTIC DISEASES.		<i>Of Diseases of Special Character, or rarely fatal.</i>	
ORDER 1.— <i>Miasmatic.</i>			
I. 1.—1.	Smallpox,	I. 1.—1.	Vaccination, not stated.
2.	Measles,		Smallpox, (2d attack.)
3.	Scarlatina,		After vaccination.
4.	Quinsy,		Erysipelas, &c., after vaccination.
5.	Croup,		Chickenpox.
6.	Whooping Cough,		Miliaria.
7.	Typhus (and Infantile Fever,)	3.	Angina maligna.
8.	Erysipelas,		Diphtheria.
9.	Metria (or Puerperal Fever,)	4.	Mumps.
10.	Garbuncle,		
11.	Influenza,	7.	Typhoid Fever.
12.	Dysentery,	8.	Phlebitis.
13.	Diarrhœa,		Pyemia.
14.	Cholera Infantum,		Hospital gangrene.
15.	Cholera,		Erythema.
16.	Ague,		
17.	Remittent Fever,	17.	Yellow fever.
18.	Rheumatism,	18.	Rheumatism, with pericarditis, or disease of heart.

CAUSES OF DEATH—(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS I.—(Continued.)	
ORDER 2.— <i>Enthetic.</i>	
I. 2.—1. Syphilis, 2. Stricture of Urethra, 3. Hydrophobia, 4. Glanders,	I. 2.—1. Gonorrhœa. Purulent ophthalmia. 4. Necusis, (usually from dissection wounds.) Malignant pustule.
ORDER 3.— <i>Dietic.</i>	
I. 3.—1. Privation, 2. Purpura and Scurvy, 3. Delirium tremens, } (Alcoholism,) . 4. Intemperance, }	I. 3.—1. Want of Breast Milk. 2. Rickets. Bronchocele.
ORDER 4.— <i>Parasitic.</i>	
I. 4.—1. Thrush, 2. Worms, &c.,	I. 4.—2. Porrigo. Scabies. Tape worm. Hydatids.
CLASS II. CONSTITUTIONAL DISEASES.	
ORDER 1.— <i>Diathetic.</i>	
II. 1.—1. Gout, 2. Dropsy and Anæmia, 3. Cancer, 4. Noma (or Canker,) 5. Mortification,	II. 1.—3. Soft cancer. Sweep's cancer. Melanosis. Other kinds of cancer. Polypus (part not stated.) Lupus. 5. Bed-sore. Dry gangrene.
ORDER 2.— <i>Tubercular.</i>	
II. 2.—1. Scrofula, 2. Tabes Mesenterica, 3. Phthisis (Consumption of Lungs,) . 4. Hydrocephalus,	II. 2.—1. Psoas abscess. Lumbar abscess. White swelling. Cretinism. 2. Tubercular peritonitis. 3. Hæmoptysis. 4. Tubercular meningitis.
CLASS III. LOCAL DISEASES.	
ORDER 1.— <i>Nervous System.</i>	
III. 1.—1. Cephalitis, 2. Apoplexy, 3. Paralysis, 4. Insanity, 5. Chorea, 6. Epilepsy, 7. Tetanus, 8. Convulsions, 9. Brain Diseases,* &c.,	III. 1.—1. Myelitis. 4. Monomania. Fright. Grief. Melancholia. Rage. 6. Hysteria. 8. Laryngismus stridulus. 9. Neuralgia. Ophthalmia. Otitis. Disease of spinal marrow. Necrencephalus. (Softening of Brain.)

* Other diseases of the brain, or diseases of the nervous system, not otherwise distinguished, are referred to this head. *Mutatis mutandis*, the note applies to the corresponding heads in other Orders of this Class.

CAUSES OF DEATH—(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS III.—(Continued.)	
ORDER 2.— <i>Organs of Circulation.</i>	
III. 2.—1. Pericarditis,	III. 2.—1. Carditis.
2. Aneurism,	Endocarditis.
3. <i>Heart Diseases,* &c.,</i>	3. Hypertrophia.
	Angina pectoris.
	Syncope.
	Arteritis.
	Hydropericardium.
ORDER 3.— <i>Respiratory Organs.</i>	
III. 3.—1. Epistaxis,	III. 3.—2. Edema glottidis.
2. Laryngitis,	4. Empyema.*
3. Bronchitis,	Hydrothorax.
4. Pleurisy,	Diaphragmitis.
5. Pneumonia,	Pneumothorax.
6. Asthma,	5. Pulmonary apoplexy.
7. <i>Lung Diseases,* &c.,</i>	6. Grinder's Asthma.
	Miner's Asthma.
	Emphysema.
ORDER 4.— <i>Digestive Organs.</i>	
III. 4.—1. Gastritis,	III. 4.—1. Glossitis.
2. Enteritis,	Stomatitis.
3. Peritonitis,	Pharyngitis.
4. Ascites,	Esophagitis.
5. Ulceration of Intestines,	5. Perforation of—
6. Hernia,	6. Congenital.
7. Ileus,	Femoral.
8. Intussusception,	Inguinal.
8. Stricture of Intestines,	Scrotal.
10. Fistula,	Umbilical.
11. <i>Stomach Diseases,* &c.,</i>	Ventral.
12. <i>Pancreas Disease,* &c.,</i>	7. Constipation.
13. Hepatitis,	11. Dyspepsia.
14. Jaundice,	Pyrosis.
15. <i>Liver Disease,* &c.,</i>	Gastralgia.
16. <i>Spleen Disease,* &c.,</i>	Hæmatemesis.
	Melæna.
	Hæmorrhoids.
	14. Gall-stones.
	15. Cirrhosis.
ORDER 5.— <i>Urinary Organs.</i>	
III. 5.—1. Nephritis,	III. 5.—6. Cystirrhœa.
2. Ischuria,	7. Diuresis.
3. Nephria, (Bright's disease,)	Hæmaturia.
4. Diabetes,	Dis. of prostate.
5. Calculus, (Gravel, &c.,)	Dis. of bladder.
6. Cystitis,	
7. <i>Kidney Disease,* &c.,</i>	
ORDER 6.— <i>Generative Organs.</i>	
III. 6.—1. Ovarian Dropsy,	III. 6.2. Orchitis.
2. <i>Disease of Uterus,* &c.,</i>	Hydrocele.
	Hysteritis, (Inflammation
	of Womb.)
	Ovarian tumor.
	Uterine tumor.
	Polypus uteri.

* See Note under III. 1.—9.

CAUSES OF DEATH—(CONTINUED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS III.—(Continued.)	
ORDER 7.— <i>Organs of Locomotion.</i>	
III. 7.—1. Arthritis, 2. Joint Disease,* &c.,	III. 7.—1. Ostitis. Periostitis. 2. Fragilitas ossium. Mollities ossium. Caries. Necrosis. Exostosis.
ORDER 8.— <i>Integumentary System.</i>	
III. 8.—1. Phlegmon, 2. Ulcer, 3. Skin Diseases,* &c.,	III. 8.—1. Abscess (part not stated.) Boil. Whitlow. 3. Roseola. Urticaria. Eczema. Herpes. Pemphigus. Ecthyma. Impetigo. Psoriasis. Ichthyosis. Tumor (part not stated.)
CLASS IV. DEVELOPMENTAL DISEASES.	
ORDER 1.— <i>Developmental Diseases of Children.</i>	
IV. 1.—1. Stillborn, 2. Premature Birth and Infantile Debility, 3. Cyanosis, 4. Spina Bifida, 5. Other Malformations, 6. Teething,	IV. 1.—2. Atelectasis. 5. Anus imperforatus. Cleft palate. Idiocy.
ORDER 2.— <i>Developmental Diseases of Women.</i>	
IV. 2.—1. Paramenia, 2. Childbirth. (See Metria I. 1.—9.)	IV. 2.—1. Chlorosis. Climacteria. Menorrhagia. 2. Miscarriage. Abortion. Puerperal mania. Phlegmasia dolens. Cæsarian operation. Extra-uterine foetation. Flooding. Retention of placenta. Presentation of placenta. Deformed pelvis. Breast abscess.
ORDER 3.— <i>Developmental Diseases of Old People.</i>	
IV. 3.—1. Old Age,	
ORDER 4.— <i>Diseases of Nutrition.</i>	
IV. 4.—1. Atrophy and Debility,	

* See Note under III. 1.—9.

CAUSES OF DEATH—(CONCLUDED.)

TABULAR LIST.	SUPPLEMENTAL LIST.
CLASS V. VIOLENT DEATHS.	
ORDER 1.— <i>Accident or Negligence.</i>	
V. 1.—1. Fractures and Contusions,*	
2. Wounds,	
3. Burns and Scalds,	
4. Poison,	
5. Drowning,	
6. Suffocation,	
7. Otherwise,	
ORDER 2.— <i>In Battle.</i>	
ORDER 3.— <i>Homicide.</i>	
ORDER 4.— <i>Suicide.</i>	
V. 4.—1. Wounds,	
2. Poison,	
3. Drowning,	
4. Hanging,	
5. Otherwise,	
ORDER 5.— <i>Execution.</i>	
V. 5.—1. Hanging,	
Violent Deaths, not classed,	
Sudden, cause unascertained,	

* Including "Railroad Accidents."

NOTE.—Cases of "infantile fever" are classed with those of typhoid, relapsing, and other continued fevers, under one name "typhus." Cases of "rheumatic fever" are classed with "rheumatism;" of "hemorrhage," and "abscess," with the diseases of the organs affected. Cases of "neglect" and "cold," except when the result of privation, (Class I. 3.—1,) are placed (with notes) under deaths by "accident or negligence," (V. 1.—7.) As "stricture of the urethra" is almost invariably the result of gonorrhœa, it is classed as I. 2.—2.

THIRTY-FIRST
ANNUAL REPORT
OF THE
BOARD OF EDUCATION,
TOGETHER WITH THE
THIRTY-FIRST ANNUAL REPORT
OF THE
SECRETARY OF THE BOARD.

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ERRATUM.—In the Abstract of School Returns appended, page lili, the total of the third column of figures should be 4,838, instead of 4,848.

ANNUAL REPORT.

The Board of Education has, during the last year, paid attention to the usual duties assigned to it. These have chiefly consisted in their superintendence of the four Normal Schools, which they are glad to report in at least as good a state as ever before. They have also, by a special Committee, attended to the duty recently assigned to them by law, in relation to the deaf and dumb pupils of the Commonwealth. The details concerning the Normal Schools will be found in the Report of the Secretary, and in the special Reports of the Visitors of each of the Normal Schools. The Sub-Committee having in charge to visit and investigate the Deaf and Dumb Asylum at Hartford, and the school at Northampton, have attended to that duty, and have also made a verbal report to this Board on the subject.

Passing by, then, these matters, the Board beg leave to submit some more general observations on modes of teaching in our schools. They are well aware that these are only suggestions, and can carry no weight of authority beyond what their intrinsic truth may secure. But, being placed by the Commonwealth at the head of the State system of education, it has seemed to be the duty of this Board, from time to time, to take a survey of the progress and defects of our system. Its general advantages we all admit. Nowhere in the world, perhaps, are better schools provided for the poor and for the younger children. Our Primary Schools, taught usually by intelligent and kind-hearted young women, who are usually left free to follow the dictates of common sense in their methods of teaching, and to whom the recent introduction of object-lessons, singing and gymnastic exercises have brought great aid—these schools are now immensely in advance of the old-fashioned “ Dame School ” described by the poet Shenstone. The little children go to them with joy, and learn fast from kindly teachers lessons of morality as well as knowledge.

The defects in our school system begin to show themselves as we go up to the Grammar and High Schools. Some of them we will endeavor to point out.

I.—*Text-Books.* The want of system in our text-books is a serious evil, and one which seems to grow from year to year. As few of the members of the school committees or of the teachers have the time and means to make a faithful comparison of the multitudinous varieties of grammars, geographies and arithmetics which swarm thick as leaves in Vallambrosa, they are much at the mercy of enterprising publishers and book-agents. Bad books or inferior books, which are issued by a wealthy and energetic business firm, will often drive out better ones, whose authors or proprietors have relaxed their efforts. It would seem desirable to have some judicious board or commission, wholly independent of authors and publishers, who should carefully examine and compare all the text-books in vogue, and publish a list of the best, describing them and pointing out their various characteristics.

This would not oblige any to accept their recommendations, but many a puzzled teacher or anxious school committee would be thankful for such a guide through the intricate wilderness of school books they are now obliged to traverse. It may be thought that this Board might itself furnish such a *catalogue raisonnée* of school books. Perhaps it might. Yet it could be done still more thoroughly by a special commission, appointed for that purpose, and consisting in part of the ablest practical teachers, male and female, and in part of distinguished literary men, who are most familiar with these studies. A catalogue of school books, carefully prepared by such a commission, might indeed excite the ill-will of publishers whose books should not receive a favorable notice therein, but would not fail of being very acceptable to the great multitude of teachers and parents.

II.—*Hours of Study.* The subject of the proper length of time to be spent by children in study is one of great importance, and it has engaged the attention of the Board during the year. It is very evident that in many schools more time is given to books than is consistent with health and ultimate intellectual progress.

A committee of this Board has visited and examined three of the Normal Schools to see what is their condition in this respect. The results are as follows :—

We addressed questions to the four principals, to which they made prompt and full replies, from which it appears,—

1. That the sessions in Bridgewater and Westfield are five and one-half hours ; in Salem, five hours ; in Framingham, four and one-half hours.

2. The hours of recreation and exercise. *In Westfield*, by a law of the school, one hour in the open air each day is given. *In Framingham*, from half past four to seven—two and one-half hours—half an hour of which must be in the open air.

In Salem no particular time is designated for exercise, but Mr. Hagar arrives at it thus. “Suppose a young lady learns with difficulty, so as to need *five hours* of study out of school to prepare her daily lessons. If she study *two hours* in the evening, there remain *three hours* of study for the day. Subtracting the three hours of study and five hours of school from the fifteen hours which are now the exact number between sunrise and sunset, there remain *seven hours* of daylight for meals, exercise and recreation. If the pupil takes two hours for her meals, she has five hours daily for exercise and recreation, leaving seven for sleep. If she needs eight hours’ sleep, she has still four hours’ leisure.”*

In Bridgewater there are printed regulations, and every pupil is furnished with these and with printed blanks in which to report each week every violation of rules. One hour’s exercise in the open air is required each day by these rules ; and by a process of subtraction like that of Mr. Hagar, Mr. Boyden concludes that giving eight hours to sleep, there remain six and a half hours each day for exercise, meals and recreation.

From the tenor of these reports, it appears that all the principals are aware of the duty of considering the health of their pupils, and are doing much toward that purpose. But this Board also has a duty in this matter. Although the principals all declare the health of their pupils in the main good, and have no belief that any special injury occurs from over-study, yet we know that

* It must be remarked here, however, that Mr. Hagar says nothing of the time a young lady takes for dressing and undressing, for repairing her clothes, which most of them must do, and for other little matters.

teachers are always in danger of demanding too much work from their pupils, and of judging the powers of the majority by the recitations of the best scholars. The danger is not from too hard work, but from working the brain when its powers are exhausted—working it too long a time without change, and working without recreation. Many writers on education now believe that the brain of an adult is not capable of more than four hours' hard work a day, and that a young person cannot work to advantage much more than three. The five hours in school are exhausting hours, as we all can remember. Nothing is more tiresome than to fix the attention where there is no natural interest, as in a school recitation in which each scholar is familiar with what all the rest are reciting.

Mr. Edwin Chadwick, the distinguished English educationalist, in a series of Blue Books printed by the British Parliament, gives a long list of facts to prove that children, working on what is called half time—that is, three hours a day instead of six—and giving the other three hours to out-of-door work, really made the greatest intellectual progress in a year.

The following remarks on this subject are from an article in the "Atlantic Monthly," by T. W. Higginson, entitled "The Murder of the Innocents:"—

"Sir Walter Scott, according to Carlyle, was the only perfectly healthy literary man who ever lived. He gave it as his deliberate opinion, in conversation with Basil Hall, that five and a half hours form the limit of healthful mental labor for a mature person. 'This I reckon very good work for a man,' he said. 'I can very seldom work six hours a day.' Supposing his estimate to be correct, and five and a half hours the reasonable limit for the day's work of a mature intellect, it is evident that even this must be altogether too much for an immature one. 'To suppose the youthful brain,' says the recent admirable report by Dr. Ray, of the Providence Insane Hospital, 'to be capable of an amount of work which is considered an ample allowance to an adult brain is simply absurd.' 'It would be wrong, therefore, to deduct less than a half hour from Scott's estimate for even the oldest pupils in our highest schools, leaving five hours as the limit of real mental effort for them, and reducing this for all younger pupils very much further.'

"But Scott is not the only authority in the case; let us ask the physiologists. So said Horace Mann before us, in the days when the Massachusetts school system was in process of formation. He asked the physicians in 1840, and in his report printed the answers of three of the most

eminent. The late Dr. Woodward, of Worcester, promptly said that children under eight should never be confined more than one hour at a time, nor more than four hours a day.

“Dr. James Jackson, of Boston, allowed the children four hours schooling in winter and five in summer, but only one hour at a time; and heartily expressed his detestation of giving young children lessons to learn at home.

“Dr. S. G. Howe, reasoning elaborately on the whole subject, said that children under eight years of age should never be confined more than half an hour at a time; by following which rule, with long recesses, they can study four hours daily. Children between eight and fourteen should not be confined more than three-quarters of an hour at a time, having the last quarter of each hour for exercise on the playground.

“Indeed, the one thing about which doctors do *not* disagree is the destructive effect of premature or excessive mental labor. I can quote you medical authority for and against every maxim of dietetics beyond the very simplest; but I defy you to find one man whoever begged, borrowed or stole the title of M. D., and yet abused those two honorary letters by asserting under their cover that a child could safely study as much as a man, or that a man could safely study more than six hours a day.”

“One of the most striking passages in the report of Dr. Ray, before mentioned, is that in which he explains, that, ‘though study at school is rarely the immediate cause of insanity, it is the most frequent of its ulterior causes, except hereditary tendencies.’ *It diminishes the conservative power of the animal economy to such a degree that attacks of disease which otherwise would have passed off safely, destroy life almost before danger is anticipated.*”

Not satisfied, therefore, with our previous examination, the Sub-Committee of the Board again visited two of the schools, and asked the collected scholars the following questions:—

1. *How many hours do you study out of school?*

In one school (where about 85 were present,) 31 scholars said they studied from three hours to three and a half; 35 said four or five hours; 12 said four to six hours, and one said *seven* hours.

In the other school (where there were about 60 present,) *no* scholar studied less than *three* hours out of school; 16 studied between three and four; 31 between four and five, and seven scholars over five hours.

2. We then asked them about their health, as follows:

How many of you are usually well, but with occasional headaches, weariness and sleeplessness?

In one school (out of 85 scholars,) 59 stated they were thus affected. In the other schools (out of 60 scholars,) we found 33 in this condition.

3. *How many are perfectly well?*

In one school (out of 85 scholars,) only 15 were perfectly well; in the other there were but 9 (out of 60.)

4. *How many have a good appetite for breakfast?*

Out of 85 there were but 40, and out of 60 there were but 22 who had.

5. *How many sleep well the whole night through?*

Out of 85 scholars, 54 could sleep well, and 27 confessed to broken sleep. Out of 60 scholars, 41 said they slept well and 16 said they did not.

Other questions of a similar kind were asked and the answers showed the danger, even in our best schools, of devoting too much time to work in school and out, and not enough to exercise and recreation.

It is evident, indeed, that the teachers of the Normal Schools have devoted no little thought to this subject, and have conscientiously endeavored to protect the health of the pupils; and yet the result is in many cases, failing health, headaches, sleeplessness,—arising evidently from too much time being given, in school and out, to brain-work. The average amount of this mental labor cannot be less than *nine hours* a day, and in many cases is more.

The Board, therefore, in view of these facts, have voted that the Principals of the Normal Schools be requested to fix eight hours a day as the outside amount of confinement and brain-work, including what is done in school and outside of it, and to impress on the pupils the importance to their health and future usefulness, of not exceeding this limit.

III.—*Cramming*. Akin to the last topic is another similar one, and of equal importance. The expressive term “cramming” has been applied to that method of study which aims at filling the memory with words, rather than training the intellect to think, or giving real discipline to the faculties. Much has been said and done to correct this fault in our schools, but much more ought to be done. The introduction of Object Lessons was intended to substitute exercise and culture of the perceptive organs

for the study of words, and has been an invaluable step in this direction. Yet even this study may be made the very opposite of what it was intended to be. If, for example, the figure of a horse is shown to a class and they are expected to tell the names of the different parts—as *hock*, *pastern*, and the like, it may be a useful lesson; but it is evidently an exercise in verbal memory and not one of the perceptive powers. The purpose of the object-lesson is to educate the child's eye to measure the size, shape, length, height of anything—to distinguish shades of colors, and to educate the hand to determine the amount of weight and so forth.

Modern education is being improved in all departments, by becoming more practical. In all kinds of teaching much is gained by constantly asking the use of each process. In teaching geography, for instance, we now are beginning to substitute map-drawing for the old method of committing to memory lists of towns, rivers, islands, lakes, &c., which were better forgotten than remembered. In many schools a child may now be called to the blackboard, and will draw from memory a sufficiently accurate outline of a European or American State. This knowledge, once acquired, remains; whereas, on the other system, when a child has nearly put out its eyes by looking up, by gas-light, on a finely printed map, the names of all the lakes in Nevada, or towns in Bavaria, he is pretty sure to forget them again in a few days. But when a child is made to learn that which he is sure to forget, it is not his memory which is educated, but the habit of forgetting.

Thus, too, in teaching grammar, it would be a great gain to scholars and teacher if the latter should constantly remember what grammar is for. It is, say the books, "the art of speaking and writing correctly." The object of grammar, then, is to teach children to speak and write correctly. Anything in grammar which helps them to do this, is useful,—that which does not, is useless. Most of our English grammars are full of mere philological studies, very interesting doubtless to grammarians, but worse than useless to little children. Of what possible advantage to a boy can it be to know that, when he says, "I shall have been rowing," one grammarian calls it the Future-Perfect Tense,—or to be informed by another, that "an adjective used with a copula to form the predicate, belongs to the subject,"—or to be told by a third, that "though articles relate to the nouns which they limit,

yet the definite article, used intensively, may relate to an adjective or adverb."

What boy speaks English better for knowing that "a compound participle, consists of two or more participles, and is, in sense, generally a perfect, but sometimes a present, participle." Yet these are the matters on which our children spend weeks and months of hard study, when there are so many important things to be learnt and so little time to learn them in. No one ever learned to read or speak English well by studying these artificial definitions and classifications.

The proper cure for this whole system of cramming, is that text-books should be prepared by men of good sense and thorough culture, and that teachers should constantly keep before their minds this question: What do these children need to know, and what use will it be to them to learn this?

IV.—*Women on the School Committee.* In all our towns it is difficult to find men to put on the School Committee, who have both time and ability for the work. But in all our towns there are women, who have had experience in teaching children, who are deeply interested in education, and who, moreover, have ample time to devote to the business. Some towns in the Commonwealth have already chosen women on the School Committee. But as the legality of this proceeding has been doubted, and as the advantages of it, in many instances, are unquestionable, this Board would recommend to the general court to pass a law, distinctly authorizing any town in the Commonwealth to put on the school committee a certain proportion of women, unless the present law be considered adequate.

V.—*Corporal Punishment.* This subject has been extensively discussed through the State in public meetings and in private during the year. The opinions of the people seem more and more tending to the conviction that if corporal punishment were wholly done away from our schools, a better mode of discipline would take its place. Many teachers never use the rod—many use it very seldom—only very poor teachers depend upon it to maintain order. Hence it follows that the incompetent teachers, with the *least* judgment and moral character, who ought *least* to be permitted to beat children, because most likely to abuse the

power, use it the most. We believe that this subject demands, and will receive, further examination. We do not, however, as a Board, recommend, at the present time the discontinuance of this system in the State, though some of our members believe that this is desirable; but we all agree with a recent report made to the School Committee of Boston, that “abstractly, corporal punishment is an evil, and not justifiable as the first resort, but as the last, except in very flagrant cases, and that only in cases of gross impropriety, of wilful, determined disobedience, and persistent defiance of the regulations and authority of the teacher, is corporal punishment justifiable.”

No report, is at present, submitted in regard to the Deaf and Dumb. To the Board of Education this is a new duty—the nature of which they are not certain that they wholly understand. If the legislature in referring this subject to our Board, only intended that we should have a general oversight of the matter, we are willing to assume this additional work. But if it be expected of us to examine the questions at issue between the friends of different methods of deaf mute instruction, it has appeared to us, after a full discussion, that this would interfere with the successful performance of our other duties, and we should in that case desire to be relieved from this duty, by having it transferred to some other Board.

The reports of the respective schools, and of the Treasurer and Secretary, are herewith submitted as approved.

ALEX. H. BULLOCK.
WILLIAM CLAFLIN.
JAMES FREEMAN CLARKE.
JOHN P. MARSHALL.
GEORGE D. WILDES.
WILLIAM RICE.
EMORY WASHBURN.
SAM'L. T. SEELYE.
JOHN D. PHILBRICK.
DAVID H. MASON.

REPORTS OF VISITORS
OF THE
NORMAL SCHOOLS.

FRAMINGHAM.

The Visitors of the Framingham Normal School have at no time had greater cause to congratulate the Board upon the condition and prospects of the school, than at the present. The past year has proved to be one of much practical success, and has established a well grounded confidence that what has been achieved, is a sure earnest of what is to be its history hereafter. Every year serves to strengthen the conviction that our Normal Schools are a necessity in the economy of our system of public education, and amply repay the expense and attention bestowed upon them by the Commonwealth and its agents. Every year, moreover, serves to develop new wants which they are needed to supply, as the science of school education becomes better and more fully known. One of the purposes to be aimed at by these schools, is to ascertain the true objects of such an education, and the instrumentalities by which these objects can be best attained. Though their teachers have a more mature class of minds to deal with than a large proportion of those which are to be trained and taught in our Common Schools, it is but applying the same processes and the same laws of progress in a wider field, and on a somewhat higher plane. No one can tell when, if ever, the child loses his identity in the youth, or when the moral or intellectual training of such a child ceases to be operative upon the character and progress of the young man or the young woman. Much, therefore, is doubtless gained every year by experience and observation on the part of the teachers of these schools, and very much is learned by what they witness in the

efforts and processes on the part of their pupils. One of the most important instrumentalities in certain parts of Normal teaching has been found to be, to observe and take part in the workings of a proper training school of young children. The hints and lessons which the Normal pupils thus acquire, are of the highest value to them in a practical point of view, and the importance of attaching, in some form, such a school to each of our Normal Schools, has already become obvious and well nigh indispensable. The experiment of this school in this direction, is detailed by the communication of the principal to the Visitors, and the readiness of the people of Framingham to aid in carrying it out, is also there stated. And the Board have had too many evidences of the favor manifested to the school by the good people of that town, to doubt of their cordial co-operation in everything that may advance its interests. The Visitors would express a decided approbation of the scheme of inaugurating, in some form, the connection of a training school for young children with the Normal School at Framingham.

In view of the results of their own personal observation of the condition of the school, in the orderly conduct, courteous dignity of deportment, and uniform habit of self-respect of its pupils, and in the consciousness that these pupils have come, as its statistics show, from the associations of common and often humble life, and from the preparatory training of our Common Schools, and have brought with them the characteristics and qualities which are developed under such circumstances, the Visitors have been profoundly impressed with the conviction that, in the discipline of schools generally, a resort to corporal punishment in the case of female pupils is not only unnecessary, but ought to be discarded. It is as essential to cultivate a delicate moral sense, as a keen intellectual perception,—to encourage a true estimate of self-respect, as to develop the powers of a ready acquisition of knowledge. And although, in the theories of education, the rod has held a traditional importance, it is grateful to believe that the world is getting in advance of such a questionable auxiliary in moral discipline. The best schools are certainly managed without its aid. And although its advocates oppose to this example the alleged fact that such is the mode of treatment of the children of some families, that force and terror are

the only means of exercising control over them, the truth of the proposition is not conceded; and if, from a habit so debasing and degrading, some children have never experienced the inspiring hope which comes from a word of cheerful encouragement, or the subduing power of a kindly sympathy, the Commonwealth owes it to herself and the great cause of Christian benevolence, as well as of salutary education, to win such children from the brutalizing effect of early and crushing abuse, by the kindness and encouragement which they may find in her schools, instead of borrowing from the discipline of such homes the very elements which give to such discipline its terror and its degradation. It is time that the experiment should at least be tried in respect to one of the sexes. And with such a training as the pupils in our Normal Schools are receiving, we believe that the experiment can and will be carried out by them, cheerfully and with entire success. And while they disclaim any right to speak in this respect in behalf of the Board, the Visitors commend this thought to the consideration and action of their associates who compose it.

In one thing the Visitors of the Framingham school take special satisfaction in offering this, their Report, of its condition the last year; and that is in the entire success of its management by a *female principal and female assistants*.

The experiment begun in September, 1866, has been carried on till it no longer is an experiment. It is now as well settled that such a principal and such a corps of teachers are competent to carry on and sustain such a school, as it is that such a school, under any hands, can be an efficient aid and instrumentality in the business of popular education in the State.

But if this be not an exaggeration, if the value of labor is to be judged of by the measure of its results, upon what principle of fairness and equality can we justify the scale of compensation which prevails in the State in respect to our schools?

Why should one of two persons who does an important and indispensable work of precisely the same character for the public, equally well and equally acceptably, be paid in the ratio to each other of three to five, or one to two, because, in the economy of nature, one was born a woman and the other a man? It is not for the Visitors of this school to engage in a discussion involving the questions now agitating the public mind in regard to the

sexes. But they would be unworthy to claim a share in what are called the manly virtues, if they could see labor expended and talent employed, from term to term and from year to year, for the best interests of the Commonwealth, without protesting that these ought to be paid by some other scale of compensation than the sex of those who perform this labor and bestow this talent.

Instead of giving a more minute account of the school during the last year in their own language, they take the liberty of embodying in their Report extracts from that of Miss Johnson, the principal of the school, made to them for their information, though without any expectation of its being published. It will be found to contain a clear statement of what has been done, and, among other things, what is due to gentlemen for their distinguished services, who have made lectures before the school during the last term. It does not present, as strongly as it ought, the wants of the school in books of reference and general reading for the pupils, and of apparatus for use in illustrating the subjects taught. Isolated as it is, and remote from any great centre of libraries or lectures upon scientific and literary topics, it needs aids within itself which might be otherwise supplied. The school is faithfully doing its share in preparing teachers to take charge of the schools and children of the Commonwealth, and it has a right to expect in return, if neither emolument nor honor, at least the means indispensable to the execution of the work imposed upon it.

FRAMINGHAM, December 21, 1867.

Gentlemen of the Board of Visitors:

The year now closing has been one of prosperity to the Normal School in this place. The numbers have been good and the interest unabated. Except the unprecedented snow-storm of last winter, in which we were very kindly cared for by the inhabitants of the town, nothing has occurred to interrupt the daily sessions of the school, and there have been great regularity and promptness of attendance.

At the commencement of the spring term, Miss Poole and Miss Kelley, graduates of the last advanced class, were appointed to the vacancies occasioned by the resignations of Mrs. Rich and Miss Hasbrouck, and Miss Devis, who had been an assistant pupil the previous term, was

added to the corps of teachers. At the opening of the fall term, Miss Chandler took the place vacated by Miss Worcester.

During the year, lectures have been delivered to the school by Hon. Joseph White, Secretary of the Board, Professor W. P. Atkinson, of Cambridge, George A. Walton, Esq., of Lawrence, and Rev. B. G. Northrop, Secretary of the Connecticut Board of Education.

For valuable contributions to the library, our thanks are due to Hon. George S. Boutwell, to Hon. Henry Wilson, to George A. Walton, Esq., of Lawrence, to our constant friend Professor Atkinson, and to the Board of Visitors.

There have been some additions to the apparatus, and a new case for chemicals has been put in the laboratory. There is still great need of additions to the library and apparatus. Although our pupils, when they become teachers, will not find expensive apparatus in their school-rooms, they will be better fitted to teach by having as many as possible of the facts of physics verified by actual experiment here. And they will be better teachers for having as wide a range of acquaintance with English literature as possible. No expenditure for good books or apparatus can be unwise.

The general health of any school is of the first importance, but additional weight is attached to this consideration in a school in which the pupils are being trained for a definite work to be performed when the training is finished. It has been frequently charged against the Normal Schools, that the constant application required to complete the course must, of necessity, break down the health of any person of ordinary vigor. Intensity of application is not, however, injurious, if not too prolonged. It becomes, then, a problem of great interest to adjust the daily mental effort required, in such proportion to the hours of recreation and sleep, that the greatest advancement consistent with good health may be attained. It is generally admitted by those who are qualified by careful experience to speak on this subject, that eight hours of close mental exertion may be safely endured by a healthy person, if these hours are duly interspersed with seasons of recreation or change.

Acting upon this knowledge, seven hours and three-quarters of daily work, the sessions of school forming a part of this time, have been required from the pupils here during the year. These hours have been so arranged, that usually the seasons of rest or change occur as often as once an hour. Special attention has been given to hours of exercise. The young ladies are required to take a half hour of open air exercise, in addition to their walks to and from the school building. It is difficult, however, to get much benefit from compulsory exercise, where the sole object is its influence upon the health. To render open air exercise

attractive, some simple means of out-of-door amusement have been furnished, and the young ladies have thus been induced to take much more than the required amount of exercise. It is pleasant to be able to say, that the result of this particular attention to the relative amount of study and exercise, together with the better arrangement for heating the school building, has caused a decided improvement in the general health of the school, and an increase of freshness and animation on the part of the pupils, without lowering the standard of scholarship.

Feeling the need of giving the young ladies some practice in teaching children, we have had, during the present term, a class of children from a Primary School in town twice a week. The beneficial effect of this experiment, has led to the inquiry whether something more might not be done in this direction. In some informal conversations with gentlemen of the school committee of the town, they have expressed a willingness to place one of the schools of the town under the direction of the principal of the Normal School. The advantage of such a school to the pupils here in training to be teachers, can hardly be overestimated. It will furnish the most effective method of illustrating the practice of teaching in our Common Schools. Gratifying testimonials to the success of the graduates of this school in the actual work of teaching, are constantly received, and wherever a failure is reported, it has come from want of skill in discipline. A well ordered children's school, in which obedience is secured so quietly and skilfully that resort to any but gentle and kindly measures is unnecessary, will be of the greatest value to the young ladies little acquainted with the child's nature, who come here to be fitted in two short years to enter upon the difficult task of teaching and governing large classes of children. More can be done in this way to help our young teachers, than by any amount of theoretical instruction. Some part of the instruction in such a school, will be given by the pupils of the Normal School, and so the power of the young ladies to teach may be developed by daily practice under the constant criticism of experienced teachers.

Owing to the isolated situation of our school building, any successful plan of this sort would require a room for the town school in connection with our building. The only expense to the State in carrying out such a plan, would be incurred in providing a room for the training school. The addition of such a room would be useful to the school even if the arrangement for the children's school should not be permanent,—a result not to be anticipated without regret. At the same time some rooms for recitations can be added to the building. The need of these will be readily seen when it is stated, that including the main hall there are only three rooms suitable for recitation purposes, while there are four classes to be provided for.

Statistics of Framingham Normal School for the year 1867.

Number graduated in January,	.	.	.	.	.	* 27
graduated in July,	.	.	.	.	.	17
left without graduation,	.	.	.	.	.	18
present term,	.	.	.	.	.	97
						<hr/>
for the year,	.	.	.	.	.	159
admitted in February,	.	.	.	.	.	26
“ in September,	.	.	.	.	.	82
Average age of Advanced Class,	.	.	.	.	.	21.25 yrs.
“ “ of Senior “	.	.	.	.	.	20.2 “
“ “ of Second “	.	.	.	.	.	18.06 “
“ “ of Third “	.	.	.	.	.	18.6 “
“ “ of Fourth “	.	.	.	.	.	17.7 “

Eight of the States and twelve of the counties of this State are represented.

Maine, 2; New Hampshire, 8; Massachusetts, 142; Rhode Island, 2; Connecticut, 1; New York, 1; Illinois, 1; South Carolina, 1; Sandwich Islands, 1.

Counties represented :—

Middlesex, 67; Worcester, 52; Plymouth, 4; Essex, Hampshire, Hampden, Suffolk, and Norfolk, each 8; Barnstable, Bristol, Franklin, and Dukes, each 1.

Towns represented :—

Framingham, 19; Worcester, 13; Marlborough, 6; Ashland, 5; Fitchburg, Northborough, Concord, Milford, and Stow, each 4; Southborough, Boston, Westborough, Clinton, Bedford, Lancaster, and Pepperell, each 3; West Newton, Holyoke, Abington, Holliston, Acton, Wayland, Hudson, Bolton, Needham, Hubbardston, Andover, Groton, and Dorchester, each 2; New Braintree, Petersham, Northbridge, Blackstone, Natick, Brookfield, Charlestown, Halifax, Amherst, Monson, Chilmark, Provincetown, Templeton, Attleborough, Stow, Upton, Dover, Ware, Townsend, Ashburnham, Prescott, Cambridge, Mendon, Newburyport, Millbury, Plympton, Grafton, Cambridgeport, Stoneham, Lowell, Orange, each 1.

* Seniors, 19; Advanced, 8.

Occupations of the parents of these pupils, are as follows:—

Farmers, 58; merchants and traders, 19; clergymen, 6; mechanics, 5; carpenters, 6; shoemakers, 4; hotel-keepers, teachers, sea-captains, brokers, machinists, physicians, each 8; tailors, blacksmiths, box-makers, mill operatives, laborers, masons, cabinet-makers, postmasters, overseers, millers, each 2; shoe manufacturer, baker, road commissioner, lawyer, butcher, paper-maker, manufacturer, secretary of Board of Education, stable-keeper, pencil-maker, architect, dentist, engineer, cashier, cemetery-keeper, soldier, railroad employé, artist, cotton buyer, sugar planter, finisher, each 1; unknown, 2.

EMORY WASHBURN.

D. H. MASON.

WESTFIELD.

The Visitors are happy to report, that, during the year, this school has enjoyed a high degree of prosperity. The number of pupils is larger than can be easily accommodated; yet the school has so grown in favor with the people, that it cannot supply more than one-tenth of the demands which are made upon it for teachers. The principal in his report says: "I have never been more encouraged than at present. The graduates of the school, are gradually working a revolution in modes of teaching. Normal graduates are everywhere preferred to those who have had no professional training." He also states that "the School of Observation works admirably, and is a necessity to the school."

The accomplished principal and his able assistants, to whom the Normal School is indebted for its high reputation, have labored during the year as zealously and efficiently as heretofore. The enthusiasm of the teachers, instead of abating, seems to increase. Their attachment to the school is shown by the fact, that the offer of larger salaries for similar positions elsewhere, has repeatedly been declined. The Commonwealth should show that it appreciates such self-sacrificing devotion to its interests. She cannot afford to risk the loss of her ablest teachers, by failing to make their salaries as large as other States would gladly pay for their valuable services.

The statistics of the school are as follows:—

Number of pupils admitted to the school the past year is—

Ladies,	70	
Gentlemen,	14	
Total,	—	84

Average age of those admitted—

Ladies,	18 yrs. 11 mos.
Gentlemen,	18 “ 7 “
General Average,	18 “ 10½ “

Number in attendance—

Ladies,	146	
Gentlemen,	18	
Total,	—	164

Number of Graduates,—

Ladies,	27	
Gentlemen,	3	
Total,	—	30

Of those in attendance—Hampden County furnished 61; Hampshire, 25; Franklin, 20; Berkshire, 13; Worcester, 11; Middlesex, 4; Essex, 1; Suffolk, 1; Vermont, 8; Connecticut, 7; New Hampshire, 5; New York, 8; Pennsylvania, 3; New Jersey, 2.

Occupation of Parents.—Farmers, 44; mechanics, 19; agents, 3; merchants, 4; clergymen, 1; manufacturers, 7; teachers, 1; deputy sheriff, 1; lawyers, 2; livery stable keeper, 1; clerk, 1.

Number of students who have received State aid—

Fall and winter term,	67	
Spring and summer term,	51	
Total,	—	118

The Board of Instruction remains the same as last year, viz.:—J. W. Dickinson, A. M., Principal; J. C. Greenough, A. B., J. G. Scott, A. M., Miss M. Mitchell, Miss A. V. Badger, and Mrs. Dickinson.

A course of lectures on Civil Polity by the Secretary of the Board of Education, a lecture on Bibliology, by the Chairman of

our Board of Visitors, and four lectures on English Literature, by Prof. Wm. P. Atkinson of Cambridge, have been given to the school the past term.

Dr. Lowell Mason, has given to the Normal School and to the School of Observation, a series of lessons in music.

Prof. Tenney has made a large donation to the Cabinet. Generous contributions have also been made by Mrs. E. Davis, Mrs. Timothy Olmstead, George E. Noble, Col. David Mosely, James Meacham, F. Kirst, John Brooks, H. T. Levi, M. Dana Reed, and Mr. Symmes of Westfield; F. A. Holcomb of Granby, Ct., C. D. Crafts, D. D. S. of Tuscola, Ill., D. Herbert Smith, and Henry A. Smith, of West Springfield. We desire to express our thanks to these generous contributors for their valuable gifts.

The Cabinet has been so much increased that some new cases must be provided for it. The Visitors recommend that an appropriation of \$200 be made for this purpose. They also advise that the usual appropriation of \$500 be made to the School of Observation. On account of the increased size of the school, the services of another lady teacher are essential. The Visitors therefore recommend that an appropriation of \$600 be made for this purpose.

S. T. SEELYE.
WM. RICE.

BRIDGEWATER.

The Visitors of the Normal School at Bridgewater report, that during the past year they have examined it at different times, and have found it doing its work well. They are satisfied that during their acquaintance with it they have not seen it in a better condition than at present, so far as opportunities of learning are concerned. The number of pupils has also increased, and as more male teachers are needed in the State, we hope that we shall be able to report hereafter a still greater number availing themselves of the advantages to be had in this institution.

The statistics of the school which follow, have been obtained from the principal, Mr. Boyden, and are as follows :—

	Ladies.	Gentlemen.	Total.
Number admitted to the school the past year,	35	11	46
Average age of those admitted,	18.5 yrs.	19.8 yrs.	18.8 yrs.
Number who had previously taught,	18	3	19
“ in attendance during the year,	73	28	101
“ of graduates during the year,	21	5	26
“ who have received State aid,	27	19	46
“ admitted since commencement of school,	—	—	1,586
“ of graduates since commencement of school,	—	—	1,001

Of the 46 pupils admitted in 1867, Bridgewater sent 5 ; East Bridgewater, 4 ; West Bridgewater and Fall River, 3 each ; Braintree, Carver and Medway, 2 each ; Berkley, Danvers, Dartmouth, Duxbury, Easton, Fairhaven, Freetown, Marblehead, Middleborough, Nantucket, Natick, Newton, Orleans, Reading, Southbridge, Templeton, Westport, Worcester, Yarmouth, 1 each ; Middletown, (R. I.,) 2 ; Newport and Portsmouth, (R. I.,) 1 each ; North Berwick, (Me.,) and Barrington, (N. H.,) 1 each.

The occupations of their fathers have been stated as follows :—Farmers, 14 ; carpenters, 4 ; blacksmiths, mechanics, merchants, overseers, post-masters, shoe-cutters, sea-captains, 2 each ; baker, boot and shoe dealer, cabinet-worker, clergyman, custom house officer, mason, machinist, miller, physician, seaman, shoe manufacturer, tailor, waiter, unknown, 1 each.

Of the 101 pupils in attendance during the year, Plymouth County sent 35 ; Bristol, 21 ; Norfolk, 7 ; Essex, Middlesex, Worcester, 6 each ; Barnstable, 4 ; Nantucket, 3 ; Suffolk, 2 ; Hampden, 1 ; Rhode Island sent 5 ; New Hampshire, 3 ; New York, 1 ; Pennsylvania, 1.

Five of the States, ten of the counties and forty-seven towns of this State have been represented by the pupils present during the year.

All the graduates of the past year engaged in teaching in this State very soon after their graduation ; and two-thirds of them were employed in annual schools. The demand for the graduates of this school is far greater than the supply, and is constantly increasing. The success of the teachers in their work, as reported by school committees and others, is very encouraging, affordin

gratifying evidence that the Normal School is more fully accomplishing its object in each successive year.

At the close of the winter term, in February, Miss Emeline F. Fisher resigned her position as teacher in the school. Miss Fisher had taught for one year classes in arithmetic, geometry and grammar, with great fidelity and with marked success. This vacancy was filled in April by the appointment of Mr. Edward W. Stephenson, a recent graduate of this school, and principal of the Grammar School at Easton. Mr. Stephenson possessed rare qualifications for the Normal School work. His enthusiasm and the entire devotion of his mind and heart to his work had won for him the respect, confidence and love of all his pupils and of his fellow teachers. He continued to perform his duties with great acceptance till early in November, when his career as a teacher, so happily begun and so full of promise of future usefulness and honor, was suddenly closed by his death after a short but severe illness from typhoid fever.

This position was again very acceptably filled by the appointment of Miss Alice Richards, a member of the last graduating class.

The Board of Instruction at the present time consists of Albert G. Boyden, A. M., Principal; Elisha H. Barlow, A. B., George H. Martin, Miss Eliza B. Woodward and Miss Alice Richards, assistants.

Very satisfactory instruction in vocal music has been given by Mr. H. E. Holt, of Boston, and the gymnastic exercises have been under the direction of Mr. Barlow.

Prof. Sanborn Tenney has given three valuable lectures on ocean currents, volcanoes and the classification of the animal kingdom.

Two very profitable and interesting lectures on the civil polity of the State have been given by the Secretary of the Board of Education, and a very good lecture upon corporal punishment, by Abner J. Phipps, Esq., the Agent of the Board.

Rev. James F. Clarke gave the school two very instructive lessons on reading, and Professor W. P. Atkinson two excellent lectures on English literature.

The libraries of the school have been increased by contributions from Messrs. Mason Brothers, N. Y.; Lee & Sheperd, Crosby & Ainsworth and Brewer & Tileston, of Boston; Hon. Charles Sumner; Hon. Oakes Ames; and Miss Laura Niles of Abington.

Our reading room has been gratuitously supplied during the year, by the publishers, with "Dwight's Musical Journal," the "North Bridgewater Gazette," and the "Old Colony Memorial and Plymouth Rock."

Valuable additions have been made to the philosophical apparatus, to the collections in zoölogy, and to the cabinet of minerals. Donations have been received from Dr. B. J. Gould, of Boston; F. H. Ludington, of St. Louis; J. D. Billings, of Canton; Walter Hoxie, of Newburyport; and several members of the school.

Our cabinet cases are full, and additions to them are very much needed for the proper arrangement and use of the specimens which have recently been added to our collections.

The year just closed has been a prosperous one for the school in the number and character of the students in attendance, the amount of work performed, and in general good health of the pupils and teachers. Nothing has occurred to disturb the harmony of its operations.

The pupils have done all that could reasonably be expected of them in their studies; a spirit of cheerful, earnest industry has prevailed among them, which gives promise that they will hereafter do good work in the Public Schools of the State. A cordial good feeling has existed among the teachers, and they have labored earnestly and faithfully to secure the main objects of the school.

Respectfully submitted.

JAMES F. CLARKE.

JOHN D. PHILBRICK.

S A L E M .

The statistics of this school for the year 1867, are as follows:—

1. The whole number of pupils since the opening of the school, September 13, 1854, is 1,087.

The number in attendance during the first term of the year 1867, 149; during the second term, 145; number of different pupils in the year, 195.

2. Class admitted February 14, 1867, 36. Average age, 18.5 years. Class admitted September 5, 1867, 46. Average age, 18 years.

3. Of the 82 pupils admitted in 1867, Salem and Lowell sent 6 each; Lynn and South Reading, 5; Amesbury, Beverly and Saugus, 3 each; Chelsea, Charlestown, Ipswich, Lawrence and Melrose, 2 each; Dennis, Dracut, Gloucester, Groveland, Manchester, Middleton, Malden, Blackstone, Lynnfield, Boston, Stoneham, Swampscott, South Danvers, Provincetown, Taunton, Tewksbury, Waltham, Wenham, Winchendon and Newburyport, 1 each. The State of Maine sent 5; New Hampshire, 9; Vermont, 2; Rhode Island, New York, Virginia, North Carolina, Ohio, 1 each.

Of the 195 pupils present during the year, Essex County furnished 93; Middlesex, 39; Suffolk, 9; Bristol, 7; Worcester, 4; Barnstable, 4; Norfolk, 3; Plymouth, 2.

4. The fathers of the pupils admitted during the year, are by occupation, as follows:—Farmers, 19; carpenters, 5; merchants, 4; clergymen, fishermen, and butchers, 3 each; lumber dealers, masons, painters, manufacturers, shoemakers, sea-captains, 2 each; blacksmith, book-agent, broker, car-repairer, clerk, cabinet-maker, carriage-maker, computer for almanacs, deputy sheriff, lawyer, doctor, discount clerk, editor, hatter, jeweller, mechanic, agent of manufacturing company, machine pattern-maker, machinist, printer, sailor, shipwright, shoe-cutter, slater, store-keeper, surveyor, superintendent of water works, superintendent of streets, steward, pump-maker, railroad contractor, tanner, wheelwright, 1 each.

5. Of the class admitted in February, 6 had taught school; of the class admitted in September, 12; total, 18.

6. Number that graduated January 31, 17; July 11, 24. A second degree was conferred upon two in January, and upon two in July.

7. Whole number of graduates of the school (24 classes,) 468.

8. In January, 19 pupils received State aid; in July, 21; making 28 different ones for the year.

9. Number of pupils present in the several classes during the first term of the year: Advanced class, 7; class A, (Senior,) 27; class B, 32; class C, 40; class D, 43.

Number present during the second term: Class A, 22; class B, 42; class C, 34; class D, 47.

10. Two teachers of the school have resigned their situations during the year. Miss I. C. Tenney left the school in February, having been induced to accept the position of head-assistant in

the Salem High School, thereby securing a salary larger than that now paid to the head-assistant in the Normal School at Salem. At the opening of the fall term, Miss Ellen A. Chandler transferred her labors to the Normal School at Framingham.

Miss Tenney and Miss Chandler, during the period of their connection with the school, discharged their duties with fidelity and success.

The ladies appointed to fill the vacant places, are Miss Isabella Hanson and Miss Harriet L. Martin. The former is a graduate of the Boston Normal School and the Boston Training School, and has had successful experience in teaching Public Schools. The latter is a graduate of the Salem High School and also of the Salem Normal School. Both of these ladies are performing their duties with great acceptance.

11. Instructive lectures have been given to the school by Hon. Joseph White, Prof. John P. Marshall, Prof. Wm. P. Atkinson, Dr. Geo. B. Loring, Mr. E. S. Morse, Rev. E. S. Atwood, Rev. James O. Scripture, Geo. B. Emerson, LL.D., Abner J. Phipps, Esq., Geo. A. Walton, Esq., and Miss Mary H. Smith.

12. Additions to the library have been made by John Anderson, Esq., and Simon Kerl, Esq., of New York; Joseph Lyman Esq., Jamaica Plain; Prof. A. Crosby, Salem; Prof. Wm. P. Atkinson, Cambridge; George A. Walton, Lawrence; and Messrs. Lee & Shepard, Boston.

Additions to the museum and cabinet, have been made by Messrs. A. S. Peabody, Charles W. Palfray, and B. F. Lander of Salem.

The class that graduated January 31, added \$21 to the fund for procuring a telescope, making the fund \$157.95. The class that graduated July 11, supplied the main hall of the school building with a handsome chandelier, at a cost of \$40.

By special appropriations a new piano, costing \$300 has been placed in the upper hall. The appropriation of \$200 to provide accommodations for the increased number of pupils, has procured eighteen new double desks. The school is now furnished with desks sufficient for one hundred and fifty-six pupils.

From these statistics it will be seen that this school has received during the past year, its usual share of public patronage. Of the thirty-six new seats provided at the beginning of the year, only eleven are now vacant, and the prospect is that the school will soon

be overflowing again. The standard of qualifications for admission was raised somewhat last year. A higher grade of scholarship was thus secured, and the chances of failure to complete the prescribed course lessened. The rapid increase in the number of pupils since the war closed, is sufficient evidence that the teachers by their ability and faithfulness have fully retained the confidence of the public.

We renew, this year, our request for additional means of illustrating the physical sciences. All the Normal Schools have more or less of philosophical apparatus, but much of it is in a worn-out condition, and made up of odds and ends, procured from various sources, by donation or purchase. The Salem Normal is, in some respects, a little better provided for than the other schools, but even here, no department of physics can be respectably illustrated without borrowing of the neighboring High Schools.

JOHN P. MARSHALL.
GEORGE D. WILDES.

TREASURER'S REPORT.

FOR APPROPRIATIONS FOR NORMAL SCHOOLS.

1867.		1867.	Mar. 27, June 11, Sept. 27, Dec. 23,	Received from State Treasurer,		Total from State Treasurer, . . . \$33,308 00
				Mar. 27, June 11, Sept. 27, Dec. 23,	of Todd fund, . . . income	
To cash paid J. W. Dickinson, salary,	\$2,500 00					\$9,000 00
for salaries of assistants,	4,650 00					8,000 00
for music,	150 00					8,000 00
for globes and cabinet expenses,	80 76					7,500 00
for fuel,	310 25					
for contingent expenses,	350 25					
for advertising in "Massachusetts Teacher,"						
and diplomas,	20 17					706 00
for School of Observation,	500 00					
Total Westfield School,	\$6,661 42					
To cash paid D. B. Hagar's salary,	\$2,500 00					
for salaries of assistants,	4,432 28					
for music,	250 00					
for lectures, natural history,	20 00					
for insurance and water rent,	180 00					
for piano,	300 00					
for desks and chairs,	200 00					
for fuel,	280 00					
for	396 04					
for	25 28					
Teacher,	8,523 61					
To cash paid for A. W. Dwyer's salary,	\$3,500 00					
for assistants' salaries,	4,104 96					
for music,	250 00					
for lectures and specimens in natural history,	125 00					
for apparatus,	60 00					
for	253 00					
for	629 44					
for	24 15					
Teacher,	7,956 54					
To cash paid for	\$1,550 00					
for	4,338 01					
for	950 00					

\$7,418 77
 \$82,460 84
 745 86
 \$83,208 00

\$83,208 00

OR STATE SCHOLARS.

1867. June 11,	To cash paid W. D. C. J. &					1867. Mar. 26, April 20, June 11, June 21,	By cash of T. Bixby, State scholar, of Geo. Brackett, State scholar, of State Treasurer, of State Treasurer,	
				\$100 00				\$100 00
				100 00				100 00
				100 00				1,200 00
				100 00				1,200 00
					\$400 00			
				\$100 00				
				200 00				
				100 00				
				100 00				
				100 00				
					600 00			
				\$100 00				
				100 00				
				100 00				
					300 00			
				\$100 00				
				100 00				
				100 00				
				100 00				
					400 00			
					\$1,700 00			
					900 00			
					\$2,600 00			
								\$2,600 00

Balance on hand,

FOR APPROPRIATIONS FOR STATE AID.

	1867.		By cash from State Treasurer, " " "	
	June 21, July 2,	Dec. 23,		
1867. June 21, July 2, 3, 3,	To cash paid Annie E. Johnson, for Framingham School, D. B. Hagar, for Salem School, J. W. Dickinson, for Westfield School, A. G. Boyden, for Bridgewater School,	\$500 00 500 00 500 00 500 00	: : : :	\$2,000 00 2,000 00
1868. Jan. 11, 14, 15, 15,	To cash paid A. G. Boyden, for Bridgewater School, Annie E. Johnson, for Framingham School, D. B. Hagar, for Salem School, J. W. Dickinson, for Westfield School,	500 00 500 00 500 00 500 00	: : : :	
	Total,	\$4,000 00		\$4,000 00

INCOME OF TODD FUND.

	1868.		Cash from State Treasurer,	
	January,			
1867. Paid music and lectures in Framingham Normal School, " " in Bridgewater " " in Westfield " " in Salem	\$188 00 200 00 150 00 170 00	: : : :	: : : :	\$706 00 706 00
	Total,	\$706 00		\$706 00

[E. E.]

JOSEPH WHITE, Treasurer.

We have examined the foregoing accounts of the Treasurer, and find them correctly kept and satisfactorily vouched.

J. D. PHILBRICK,
D. H. MASON,

Committee on Accounts.

THIRTY-FIRST ANNUAL REPORT
OF THE
SECRETARY
OF THE
BOARD OF EDUCATION.

SECRETARY'S REPORT.

Gentlemen of the Board of Education:—

It is with no ordinary gratification that I am permitted, in presenting the Thirty-First Annual Report of the Secretary, to congratulate you, and our fellow-citizens, upon the constantly increasing proofs, which the history of the last school-year furnishes, of steady and substantial progress in the department of public education throughout the Commonwealth.

Many of these proofs are found in the reports of school committees, copious extracts from which have been made; in the abstracts of the school returns for the year 1866-7; and, more particularly, in the summary of the statistics furnished by the returns, as compared with those of former years, and to which our attention is respectfully invited.

Summary of Statistics for 1866-7.

Number of cities and towns,	8
All the cities and towns have made the annual returns required by law.	
Number of School Districts,	1,8
Number of Public Schools,	4,8
Increase for the year,	79
Number of persons in the State between five and fifteen years of age, May 1, 1866,	261,4
Increase for the year,	6,175
Number of scholars of all ages in all the Public Schools in summer,	235,2
Increase for the year,	4,347
Number of scholars of all ages in all the Public Schools in winter,	237,3
Increase for the year,	5,679
Average attendance in all the Public Schools in summer,	189,1
Increase for the year,	6,237
Average attendance in all the Public Schools in winter,	190,8
Increase for the year,	3,596

Ratio of the mean average attendance for the year to the whole number of persons between five and fifteen, expressed in decimals, . . . . .	.73
Number of children under five attending Public Schools, . . .	3,899
Decrease for the year,	884
Number of persons over fifteen attending Public Schools, . . .	21,976
Decrease for the year,	146
Number of teachers in summer; males, 439; females, 5,287; total,	5,726
Increase of males, 24; females, 97; total increase, 121	
Number of teachers in winter; males, 936; females, 4,871; total,	5,807
Decrease of males, 26; increase of females, 176; total increase,	150
Number of different persons employed as teachers in Public Schools during the year; males, 1,020; females, 6,739; total,	7,759
Decrease of males, 66; increase of females, 227; total increase,	161
Average length of the Public Schools,	eight months and two days.
Increase for the year,	three days.
Average wages of male teachers (including High School teachers,) per month,	\$66 92
Increase for the year,	\$7 39
Average wages of female teachers per month,	\$26 44
Increase for the year,	\$2 08
Amount raised by taxes for the support of Public Schools, including only wages, board, fuel, care of fires and school-rooms,	\$2,355,505 96
Increase for the year,	\$362,328 57
Income of surplus revenue and similar funds appropriated for Public Schools, and reckoned the same as tax,	\$4,443 64
Decrease for the year,	\$219 08
Voluntary contributions to maintain or prolong Public Schools, or to purchase apparatus,	\$32,370 20
Decrease for the year,	\$2,762 91
The amount of local School Funds, the income of which can be appropriated only for the support of Schools and Academies,	\$1,091,339 37
Increase for the year,	\$12,544 66
Income of local School Funds appropriated for Schools and Academies,	\$69,208 40
Increase for the year,	\$2,861 34
Income of the State School Fund heretofore payable in July, by Act of the legislature in 1867, is made payable hereafter January 25, in each year. The amount received by the cities and towns in aid of Public Schools for the school-year 1866-7,	\$62,641 15
Amount paid for superintendence of Schools and printing of School Reports,	\$76,779 67
Increase for the year,	\$9,029 10

Aggregate returned as expended on Public Schools alone, exclusive of expense of repairing and erecting School-houses and of School Books,	\$2,531,740
Increase for the year,	\$368,375 68
Sum raised by taxes, (including income of surplus revenue and of funds held on similar conditions—\$4,443.64,) exclusive of taxes for School edifices, for the education in the Public Schools, of each child in the State between five and fifteen years of age,—per child,	\$9.
Increase for the year,	\$1.20
Percentage of the valuation of 1865, appropriated for Public Schools, (two mills and thirty-four hundredths,)	\$0.00
Increase for the year,	\$0.000-36
All the towns in the State have raised the amount (\$3 for each person between five and fifteen) required by law as a condition of receiving a share of the income of the State School Fund, with the exception of the eight following, viz.: West Stockbridge, Clarksburg, Richmond, New Ashford, Dudley, Cheshire, Hancock and Mt. Washington.	
Number of towns that have raised the sum of \$3 or more for each person between five and fifteen,	
Increase for the year,	9
Number of Schools returned as High Schools,	
Number of cities and towns maintaining High Schools according to the statutes,	
Number of High Schools kept according to the statutes,	
Number of incorporated Academies returned,	
Increase for the year,	3
Average number of scholars,	3
Increase for the year,	182
Amount paid for tuition,	\$148,523
Increase for the year,	\$24,707 48
Number of Private Schools and Academies returned,	
Decrease for the year,	43
Estimated average attendance,	14
Decrease for the year,	1,970
Estimated amount of tuition paid,	\$416,194
Increase for the year,	*\$9,746 95
Amount derived from taxes, tuition, and funds, and expended on Public Schools, Private Schools and Academies, exclusive of the expense of buildings and School Books, is \$3,160,665.94; which is equal to the sum of over \$12 for every person in the State between five and fifteen years of age.	

The statistics presented in previous reports, since the war, have shown a large annual increase in the means raised by taxes.

* In the last report the amount given should have been \$406,447.18, with an increase for the year of \$35,831.27.

alone, for the support of the Public Schools. The increase for the last year is still larger, and quite unexampled in the history of the Commonwealth, amounting to \$362,328.57—a sum added in a single year nearly or quite equal to the entire amount raised by tax in 1837, or only thirty years before. The largest increase in any former year was for the school-year 1864-5, amounting to \$246,310.31, which sum is less by \$116,018.26 than the amount of increase for the school-year 1866-7. And this advance has been made when the burdens imposed upon the people by municipal, State and Federal taxes, and by high prices, have been greater than at any time since the formation of the State Constitution. All the counties, except the small county of Dukes, have increased their appropriations, and, no doubt, from influences and for reasons common to them all.

Their advance is shown by the following table:—

COUNTIES.	SUMS RAISED.		Increase.	Per cent.
	1865-6.	1866-7.		
Suffolk, . . .	\$495,419 29	\$632,000 00	\$136,580 71	27
Essex, . . .	226,480 23	259,613 02	33,132 79	14
Middlesex, . . .	403,432 50	473,535 64	70,103 14	17
Worcester, . . .	188,764 27	225,730 51	36,966 24	19
Hampshire, . . .	43,881 00	52,698 45	8,817 45	20
Hampden, . . .	83,453 00	96,001 00	12,548 00	15
Franklin, . . .	32,212 61	33,889 17	1,676 56	5
Berkshire, . . .	45,921 60	59,546 00	13,624 40	30
Norfolk, . . .	231,602 29	263,414 60	31,812 31	14
Bristol, . . .	118,233 61	127,651 19	9,417 58	8
Plymouth, . . .	69,801 99	74,701 38	4,899 39	7
Barnstable, . . .	41,325 00	43,625 00	2,300 00	5
Dukes, . . .	4,650 00	4,600 00	*50 00	—
Nantucket, . . .	8,000 00	8,500 00	500 00	6
State, . . .	\$1,993,177 39	\$2,355,505 96	\$362,328 57	18

* Decrease.

The enlarged appropriations for the support of schools have led to a decided increase in the wages of teachers; also in the length

of the schools. The average increase in the latter respect has been three days to each of 4,838 schools, which is an aggregate of 14,514 days, or 725 months and .14 days for all the schools, and equal to an addition of over $90\frac{1}{2}$ years of schooling in the Public Schools, reckoning 8 months for a year, which is the average length of the schools for the State.

The catalogue of the towns which maintain High Schools has been transferred to the abstract of returns, and taken its appropriate place with the statistics of Academies and Private Schools. It is gratifying to learn that the number is constantly increasing, and there is good ground for the belief that the time is near at hand when every town in the Commonwealth required to keep a High School will do so, or make such provisions for instruction in the branches of learning taught in them as will satisfy the requirements of the statutes, while very many towns not required by the statutes will maintain such schools. I invite especial attention to the pages containing the statistics of these schools, as furnishing one important item of the proofs to which I have alluded, of progress in our school system.

LEGISLATION.

As in my last Report, I herewith present the several Acts of the last legislature which relate to the Public Schools, and to the duties of the Board.

[Chap. 98.]

AN ACT to change the Time for the Apportionment of the Income of the School Fund.

Be it enacted, &c., as follows:

The third section of the thirty-sixth chapter of the General Statutes is hereby amended, so that the income of the Massachusetts school fund appropriated to the support of public schools, which shall have accrued on the thirty-first day of December in each year, shall be apportioned by the secretary and treasurer in the manner provided in said section, and paid over by the treasurer to the treasurers of the several cities and towns on the twenty-fifth day of January thereafter, instead of the times named in said section; and so much of said section as is inconsistent with the provisions of this act is hereby repealed. [Approved March 23, 1867.]

Chapter 58 of the Acts of 1866 placed the management of the School Fund in the hands of special commissioners, to wit: the Secretary of the Board of Education and the Treasurer of

Commonwealth; and required them "to report annually to the legislature the condition and income thereof." This requirement led to the passage of the foregoing Act. The account, as in the case of other public funds, will now be made up to the first of January, thus enabling the legislature to understand more completely than heretofore the actual condition of the fund, and the amount of income subject to appropriation. The effect will be to distribute to the towns in January, 1868, the moiety of the income for eighteen months instead of twelve.

[Chap. 2.]

AN ACT to amend chapter two hundred and eighty-three of the Acts of the year eighteen hundred and sixty-six, concerning the Care and Education of Neglected Children.

Be it enacted, &c., as follows:

SECT. 1. Section one of chapter two hundred and eighty-three of the acts of the year eighteen hundred and sixty-six, is hereby so amended, that the approval therein required to be made by the supreme judicial court or any two justices thereof, shall be made by the superior court, or, in vacation, by a justice thereof.

SECT. 2. This act shall take effect upon its passage. [*Approved January 30, 1867.*]

[Chap. 156.]

AN ACT in addition to an Act concerning Truant Children and Absentees from School.

Be it enacted, &c., as follows:

SECT. 1. So much of chapter two hundred and eighty-three of the acts of the year eighteen hundred and sixty-six as provides that chapter two hundred and seven of the acts of the year eighteen hundred and sixty-two shall not apply to nor have effect within the city of Boston, is hereby repealed.

SECT. 2. This act shall take effect upon its passage. [*Approved April 22, 1867.*]

The two Acts referred to in the foregoing enactments embrace two distinct classes of cases. The well known Act of 1862, whose operation in the city of Boston had been suspended by chapter 283 of the Acts of 1866, and which is revived by the above Act, relates solely to habitual truants and absentees from school from whatever cause.

The Act of 1866, on the other hand, applies to children "under sixteen years of age, who, by reason of the neglect, crime, drunk-

onness, or other vices of their parents, and not from any fault of their own, are suffered to be growing up without salutary parental control and education, or in circumstances exposing them to lead idle and dissolute lives," and gives authority to the cities and towns "to make such by-laws and ordinances respecting such children as shall be most conducive to their welfare, and the good order of such cities and towns."

It will be observed that the Act of 1862 is peremptory, while that of 1866 is permissive. As the two Acts are distinct in their objects and provisions, and both are essential features of our public policy which insists upon the education, to a certain degree, of the whole population, it is well that the operation of each should be unrestrained by conflict with that of the other. Together they embrace a large class of the causes which keep children from the Public Schools. Let the two be executed with wisdom and firmness, and the most healthful results cannot fail to follow. Nor does the faithful administration of such laws involve, as is sometimes charged, any unwarranted intrusion upon the domain of private or parental rights. The rights of the parent grow out of his relations, and the duties which these relations involve, to his children on the one hand, and to the State on the other. And beyond all question, one of the most important of these duties is so to train his children, in knowledge, as well as in virtue, as to make them to be useful members of the State. He has no right to keep them in ignorance, or allow them to form habits of idleness and vice, and so to grow up to be a pest and a curse to society. And if "crime, drunkenness, or other vices" lead him to do this, then it is the manifest duty of the State to interpose and protect itself from harm. If that policy be just which authorizes the estate of the drunkard and the incorrigible spendthrift to be put in commission for the mutual protection of himself and of the community against pecuniary loss, shall that policy be deemed less just and wise which assumes as a public and sacred trust the education of his children?

Nor is such legislation a new feature in Massachusetts policy. It has existed from the beginning. The very first legislative act relating to public instruction found in our colonial records, as we have elsewhere shown, is an "order" of the General Court, passed June 14, 1642, as follows:—

"Forasmuch, as the education of children is of Singular behoofe and benefit to any Commonwealth, and whereas many Parents and Masters are too indulgent and negligent of their duty in that kind;

"It is Ordered, that the Select men of every Town, in the several Precincts and quarters where they dwell, shall have a vigilant eye over their neighbors, to see, First, that none of them shall suffer so much Barbarism in any of their families, as not to endeavor to teach, by themselves or others, their Children and Apprentices, so much learning as may enable them to read perfectly the English tongue, and knowledge of the Capital Laws, upon penalty of twenty shillings for each neglect therein," &c., &c.

That this "order" was not allowed to become a dead letter on the statute book, the records of many of our ancient towns abundantly show.

In the year 1680, the selectmen of Sudbury, in obedience to an order of the General Court "requiring returns to be made relative to the support of the ministry, the maintenance of schools, &c.," reported that "having gone over the houses throughout the town, from house to house, and inspected and made inquiry," they "do find that all children and young persons are in a forward and growing way as to *reading* and *catechising*, and as to *work* and *employment*, they find them generally diligent and in a hopeful thriving way in all respects;" and further, "that though there be no stated school, the inhabitants being scattered," (the number of families "in and about the town" was 59,) "they have two school dames each side of the river that teacheth small children to spell and read;" "and for teaching to write and cypher, there is Mr. Tho. Walker, and two or three others about town that do teach;" "and touching persons who live from under family government, or after a dissolute and disorderly manner, to y^e dishonoring of God and corrupting of youth, the select men, after personal inquiry into all families and quarters, in and about this town, do return this answer, *that they find none such amongst them.*" Well does the historian* from whose pages I have taken these simple words add: "Who can estimate how far we are indebted to the noble spirit speaking in these tones of homeliness and simplicity, for the intelligence, the enterprise, the moral and religious spirit which have since characterized this Commonwealth!"

* Rev. Mr. Barry's History of Framingham, pages 30 and 31.

In the light of such examples with their results before us, there is no room left for doubt that such a faithful and vigorous administration of the laws as shall gather into our Public Schools all the youth of the Commonwealth, would do more than a hundred remedial and penal statutes to relieve her from pauperism and protect her from crime.

[Chap. 154.]

AN ACT in relation to School Districts.

As it enacted, &c., as follows:

The provision of section one of chapter thirty-nine of the General Statutes, authorizing towns to divide into school districts, shall not be applicable to any town which has [abolished] or shall hereafter abolish the school districts therein by virtue of the provisions of the third and fourth sections of said chapter. [Approved April 22, 1867.]

No small diversity of opinion has existed in regard to the legal effect of a vote by a town to abolish the district system, under the provisions of the third and fourth sections of chapter 39 of the General Statutes. Some contended, and with much show of reason, that the action was final and irreversible; others, that it could only be revised after the expiration of the decade of years designated in the first section of said chapter during which the vote to abolish was taken; and others still, that the action of the town could be revised at any time subsequent. In this state of things the vote to abolish school districts, although taken in obedience to law at an annual meeting, with a full attendance of voters and after ample discussion, was frequently the signal for renewed neighborhood debates, and often of bitter contention—leading to frequent town meetings, in which the contending parties were alternately successful. Meanwhile the rights of school district property, which, by the vote to abolish, had vested in the town, were the subject of serious doubt, if not of litigation.

It was to remove all occasion for these cases of doubt, debates and strife, and perhaps of vexatious litigation, that the above Act was passed; and not, as has been supposed by some persons, to take advantage of the hasty action of the town to secure a desired result. The law will operate not to check deliberation, but to encourage it. The action being final, will induce a thorough canvass of the reasons for and against the measure proposed, and the vote will be far more likely to express

the settled judgment of the voters, and the result meet with a more cordial acquiescence than under the previous conditions of doubt and uncertainty as to the legal effect of the town's action. Moreover, the question being definitely settled, the way is open to take, at once, all needful steps for the support and management of the schools by the proper officers of the town. When this is done, it will require but a brief experience to make the benefits of the new system so manifest as to convince the stoutest unbelievers.

And here I desire it to be noted that the change does not necessarily involve, as many suppose, any questions relating to the number of schools to be kept, their size or mode of organization. It simply places all these matters, as well as the location and erection of school-houses, and the hiring of teachers, under the direct control of the town, or the officers elected by and responsible solely to it. This is all, and so doing the town performs its duties relating to education—the highest duties committed to it by the Commonwealth—in precisely the same manner in which all other municipal duties are discharged. It thereby retains in its own hand the power to expend the money raised by a common and equal taxation for the common and equal benefit of every child within its borders—a result never secured under the discarded system.

But I refrain. It is not my purpose to discuss this question at large; to go over the ground which has been so often and so ably occupied, not only by my distinguished predecessors in office, but by most of the leading observers and thinkers on educational topics in the Commonwealth for the last twenty-five years.

Indeed, the question may be asked, Why do the Board of Education and their officers continue to spend time in discussions which relate only to matters of town organization, to the neglect of other and higher ones relating to the order of studies, methods of classification, of teaching and of discipline in the schools as they now exist? The simple and satisfactory answer has always been and must still be, that there can be no regular classification, no regular order of studies, and of course no uniform *system of teaching*, in the schools where the district system prevails. Hence this matter of organization is fundamental. It is the condition, the absolute and indispensable condition of all successful teaching. As in the animal kingdom, so it is here, without organization there

an be no life ; and where the organization is defective, the life is feeble.

To-day there are scores of school districts in the Commonwealth whose pupils number from two to ten—and in many towns such districts constitute a majority of the whole ; their schools are short, and the teachers changed at every term. Of what practical use to present the questions relating to the best methods of teaching and the proper order of studies to the consideration of such a community ?

[Chap. 155.]

AN ACT concerning the change of Text-Books in the Public Schools.
As it enacted, &c., as follows :

SECT. 1. In any town or city in this Commonwealth, in which the school committee consists of less than twelve, a change may be made in the school books, in the public schools in such town or city, by a vote of two-thirds of the whole committee, at a meeting of said committee, notice of such intended change having been given at a previous meeting of said committee.

SECT. 2. This act shall take effect upon its passage. [Approved April 2, 1867.]

On a comparison of this with former Acts on the same subject it will be seen that a school committee consisting of *three, six or nine* persons, may make a change in school books by a vote of *two-thirds* of the whole committee ; where the committee consists of *twelve, fifteen or eighteen* members, and the questions relating to school books are intrusted to a sub-committee, a change may be made with the consent of *two-thirds* of this committee and the concurrent vote of *three-fourths* of the whole board ; and in any city where the school committee consists of *more than eighteen* persons a change may be made by a *majority* of the whole committee.

[Chap. 123.]

AN ACT concerning Educational Statistics.

As it enacted, &c., as follows :

SECT. 1. It shall be the duty of the trustees, officers or persons in charge of all institutions of learning, whether literary, scientific or professional, incorporated, supported or aided by this Commonwealth ; of all reform schools and almshouses ; of all private educational institutions ; also of all agents, guardians or treasurers to whom appropriations shall be made for the support of schools among the Indians of this Commonwealth, whether by general statute or special resolve, on or before the first day of

June in each year, to make a report in writing to the board of education, at the office of the secretary, of such statistics of the several institutions or schools under their charge, relating to the number of pupils and instructors, courses of study, cost of tuition and the general condition of said institution or school, as said board shall prescribe.

SECT. 2. The board of education shall prepare blank forms of inquiry for such statistics, as they shall deem expedient to require, and shall cause the same to be sent to each of said institutions or schools, on or before the tenth day of May in each year. In preparing said forms, reference shall be had to the requirements of the national bureau of education recently created by the general government.

SECT. 3. This act shall take effect upon its passage. [*Approved April 3, 1867.*]

It has long been deemed highly desirable that all the educational statistics of the Commonwealth should be annually gathered, condensed and printed in one public document, and thus be accessible to all; and none seems more fitting for such a purpose than the Annual Report of this Board. If the experiment prove successful, the report will give a comprehensive view of the entire annual work of our State in all the branches of the great department of education. I most earnestly invite the hearty co-operation of all persons having charge of the institutions of learning of every kind to aid in securing so desirable a result. Blank forms of inquiry will be so prepared as to cause the least possible trouble in giving the information sought, and sent to those having charge of the institutions mentioned in the Act, as it requires.

[Chap. 285.]

AN ACT in relation to the Schooling and Hours of Labor of Children employed in Manufacturing and Mechanical Establishments.

Be it enacted, &c., as follows:

SECT. 1. No child under the age of ten years shall be employed in any manufacturing or mechanical establishment within this Commonwealth, and no child between the age of ten and fifteen years shall be so employed, unless he has attended some public or private day school under teachers approved by the school committee of the place in which such school is kept, at least three months during the year next preceding such employment: *provided*, said child shall have lived within the Commonwealth during the preceding six months; nor shall such employment continue unless such child shall attend school at least three months in each and every year; and *provided*, that tuition of three hours per day in a public

private day school approved by the committee of the place in which school is kept, during a term of six months, shall be deemed the equivalent of three months' attendance at a school kept in accordance with the customary hours of tuition; and no time less than sixty days of actual schooling shall be accounted as three months, and no time less than one hundred and twenty half days of actual schooling shall be deemed an equivalent of three months.

SECT. 2. No child under the age of fifteen years shall be employed in any manufacturing or mechanical establishment more than sixty hours in any one week.

SECT. 3. Any owner, agent, superintendent or overseer of any manufacturing or mechanical establishment, who shall knowingly employ or permit to be employed any child in violation of the preceding sections, or any parent or guardian who allows or consents to such employment, shall for such offence forfeit the sum of fifty dollars.

SECT. 4. It shall be the duty of the constable of the Commonwealth to specially detail one of his deputies, to see that the provisions of this act and all other laws regulating the employment of children or minors in manufacturing or mechanical establishments, are complied with, and to prosecute offences against the same; and he shall report annually to the Governor all proceedings under this act; and nothing in this section shall be so construed as to prohibit any person from prosecuting such offences.

SECT. 5. Chapter two hundred and seventy-three of the acts of the year eighteen hundred and sixty-six is hereby repealed: *provided*, this repeal shall not affect any proceedings now pending.

SECT. 6. This act shall take effect sixty days from its passage.
Approved May 29, 1867.

The foregoing Act differs from that of the previous year on the same subject in several important particulars, and is a decided improvement upon it. Instead of the attendance at school for a term of six months, the time of attendance is made to conform to the terms of the large majority of our Public Schools, and will not only secure a more profitable employment of the time devoted to study, but also give better opportunities for labor, and thus tend to the formation of habits of industry. Moreover the permission is given, wherever the proper facilities are furnished, for attending school and working upon the "half-time system," which has been adopted with very satisfactory results in many manufacturing districts in this country and in Great Britain.

An important feature of the Act is that which provides for the employment of a competent officer "to see that the provisions

the Act, and all other laws regulating the employment of children or minors in manufacturing or mechanical establishments are complied with, and to prosecute offences against the same."

The Commonwealth has been peculiarly fortunate in engaging the services of a gentleman having the highest qualifications for the discharge of the delicate and difficult duties of the office, General H. K. Oliver, late Treasurer and Receiver-General. The high public offices which he has filled, his familiarity with the organization and working of our large manufacturing establishments, his ripe scholarship and well known sympathy with our system of Public Schools, and above all, his long experience as an educator, comprise a combination of qualities which affords the most ample guarantee that his continued employment will be productive of the most happy results.

Whatever changes, therefore, may be made in the department of public service to which he is attached, it seems to me to be a matter of the highest moment that he be retained in this service, either as an independent officer, or under the direction of some competent and permanent branch of the government.

The confession that the employment of a special agent is needed to enforce obedience in a Christian community to such a law, breathing the tender spirit of the Great Teacher toward the helpless and exposed, is indeed a humiliating one. But to ignore or cover up the fact would be not only moral cowardice, but gross cruelty and injustice to those in whose interest the enactment was made. They are indeed a helpless class. Between the pressure of the heavy hand of capital, sometimes blind and relentless, and the behests of ignorant or vicious or necessitous parents, those children can look alone to the Commonwealth as a protector and guardian. Like the blind, and the deaf-mute, and hardly less helpless than these, they are the wards of the State, and claim, not as charity but as justice, the privileges of knowledge and of healthful training.

That the foregoing are not idle fancies, having no foundation in fact, the following statement, taken from the annual report for 1867 of a veteran and beloved "minister at large," will painfully prove:—

"The legislature of last winter passed a law that no child under the age of fifteen years shall be employed in any manufacturing establishment

more than sixty hours in one week. And yet, within three months, children in this city, ten and eleven years of age, have been employed in one of the smaller mills, day after day, from seven in the morning until ten at night, with only the usual noon intermission, and one hour at an early supper time; *and the children have been so exhausted as hardly to be able to reach their homes and their beds!*"

The good missionary well adds: "Such violence to the constitutions of children is barbarous."

[Chap. 311.]

AN ACT concerning the Education of Deaf-Mutes.

Be it enacted, &c., as follows:

SECT. 1. The governor, with the approval of the board of education, hereby authorized to send such deaf-mutes or deaf children between five and ten years of age, as he may deem fit subjects for instruction at the expense of the Commonwealth, to the Clarke Institution for Deaf-Mutes at Northampton, or to such schools or classes as now are or may hereafter be established for the education of deaf-mutes in this Commonwealth.

SECT. 2. The governor is hereby authorized to draw his warrant for such sums as may be necessary to provide for the instruction and support of the pupils named in the preceding section, not exceeding for each pupil the amount which is now or may hereafter be paid by the Commonwealth for the education and support of deaf-mutes at the American Asylum at Hartford.

SECT. 3. The education of all deaf-mutes who are now receiving instruction may hereafter receive instruction at the expense of the Commonwealth shall be subject to the direction and supervision of the board of education, and said board shall set forth in their annual report the number of pupils so instructed, the cost of their instruction and support, the way in which the money appropriated by the Commonwealth has been expended, and such other information as said board may deem important to be laid before the legislature.

SECT. 4. The governor is hereby authorized to extend to ten years, the term of instruction now granted to deaf-mutes educated at the expense of the Commonwealth.

SECT. 5. The sum of three thousand dollars is hereby appropriated for the education of deaf-mutes in addition to the amount heretofore appropriated, to be paid from the treasury of the Commonwealth.

SECT. 6. All acts and parts of acts inconsistent herewith, are hereby repealed.

SECT. 7. This act shall take effect upon its passage. [Approved June 1, 1867.]

This Act is the initial step of a new policy with respect to the education of the deaf-mutes within our Commonwealth, and devolves new and responsible duties upon the Board of Education, and therefore deserves more than a passing notice.

The well known "American Asylum" was incorporated as "The Connecticut Asylum for the Education and Instruction of Deaf and Dumb Persons," May 16, 1816, and was opened in April, 1817, at Hartford, with seven pupils, of whom four were from Massachusetts.

Much interest was awakened in this enterprise throughout our community, and considerable sums were given in its aid in this and other States.

On the 12th of June, 1817, a Resolve was passed by the general court, requiring the "select men of the towns and the assessors of plantations to ascertain the number of deaf and dumb persons within their respective towns and plantations, and report to the secretary of the Commonwealth, at the next session, specifying the age and sex of such persons, and their situation and that of their near relatives, in point of property."

The information thus collected was communicated by the secretary to the legislature, and referred to a joint committee, who reported, "That the situation of the unhappy persons to which the attention of the legislature has now been called is worthy of the paternal regard of the government;" and after adverting to the fact that the institution, recently founded in Connecticut, had "commenced its operations under flattering prospects of success," they suggest as a "subject not unworthy of inquiry, whether one establishment of this kind would not be sufficient for the New England States, and whether some or all of those States, and the opulent individuals therein, will not be disposed to contribute to such an establishment." And to this end the committee submitted the following Resolve, which was passed Feb. 5, 1818:—

"Resolved, That the Hon. John Phillips, President of the Senate, Hon. Timothy Bigelow, Speaker of the House of Representatives, and the Hon. Richard Sullivan, be a Committee in the recess of the Legislature, to consider the situation and circumstances of the deaf and dumb, to extend their inquiries, so far as is practicable as to the views of the neighboring States in relation to this subject, to see what aid this Commonwealth can, in their opinion, consistently bestow in promoting an institution for improving the condition of these persons, and the most eligible mode of carrying the same into effect—to report at the first session of the General Court."

On the 19th of June, 1819, the legislature passed a Resolve appropriating four thousand dollars for the education of two pupils at the Asylum at Hartford, at an expense not to exceed \$200 for each individual per annum for a period of four years. It also provided that if the number making application for aid should be more than twenty and less than forty, then the \$4,000 should "be distributed among them in equal proportions;" and if a greater number than forty should apply, "the persons to attend shall be designated by lot;" and further, if a greater number make application than can be received at the Asylum, then "the persons to be placed there at the expense of the Commonwealth shall be designated by lot under the direction of the governor." Provision was made for giving due notice of the Resolve, and the method of making applications for the aid granted was prescribed. The Resolves were to "continue in force six years and no more."

On the 25th of January, 1820, the legislature, in accordance with the suggestion of the directors of the Asylum, that "three years were required for the instruction of a pupil even in the common branches of education," authorized the continuance of State pupils in the Asylum for the term of six years.

Such is a brief account of the cautious, wise and liberal legislation of the Commonwealth, by which she for the first time assumed the high duty of educating that unfortunate portion of her children who are deprived of hearing and speech, and availed herself of the advantages offered by the Institution at Hartford for that purpose.

Meanwhile the United States Congress, on the 3d of March, 1819, granted a tract of land equal to a township, which, or the money arising from the sale of it, should "remain forever to the use of the Asylum for the education and instruction of deaf and dumb persons;" and in accordance with the national character thus given to it, the style of the institution was changed in March following from that of the "*Connecticut Asylum*" to the "*American Asylum*." The land granted by Congress was sold and—

"Realized \$314,000, of which \$75,000 was invested in real estate, the balance in productive funds. The directors voted to expend all and the income of said funds in deaf-mute education, the principal to remain a sacred trust. The fund has been so managed and remains intact; but

the increase of the value of the real estate, the property of the institution is now estimated at \$500,000."

"This income has enabled the directors to reduce the price of tuition and board to about one-half the actual cost.

The rates from 1817 to 1821 were, per annum,	\$200 00
1822 to 1825 " "	150 00
1826 to 1834 " "	115 00
1835 to 1863 " "	100 00
for 1864 were	125 00
from 1865 to 1866 were, per annum,	175 00

with the cost of clothing and school-books in addition.

Average number of pupils for the first forty years,	125
For the last ten years,	225
Present number, 1867,	220
Whole number since 1817,	1,700

[See Report of the Joint Special Committee on the Education of Deaf-Mutes, May 27, 1867, page 5.]

"In January, 1825, commissioners from Maine, New Hampshire, Vermont and Massachusetts, met at the Asylum, to consider the question, whether each of these States should establish separate schools for the education of deaf-mutes, or should send pupils to Hartford. The commissioners voted unanimously to adopt the latter course. Rhode Island came into the arrangement in 1842."

The Asylum has ever since been regarded as a New England institution.

The relations established with the Asylum by the Resolves of June, 1819, have been maintained until the present time. Here the deaf-mutes, aided by the State, have had opened up to them the sources of knowledge, and been guided in the paths of a Christian culture, under the general guardianship of the governor and council, and more recently of the "board of state charities." The reports of this board, and of its secretary, contain much valuable statistical and other information relating to the Asylum and the pupils from our own Commonwealth, to which reference is respectfully made.

The management of the institution has, during the entire period of our connection with it, received the cordial approval of the authorities who have visited it, with no other exception, so far as

I am informed, than that which has been the result of different opinions respecting the methods of teaching practised there. At this point the report from which I have already drawn, speaks as follows:—

“Your Committee are glad to be able to speak in terms of highest commendation of the American Asylum. The managers have conducted affairs with wise economy, and have exhibited an earnest desire, repeated investigations at home and abroad, to introduce the best method of teaching. This investigation it is believed they will continue, and that they are not so wedded to their present system as to be unwilling to modify it if their own or others’ experiments shall encourage them to do so.

“Your Committee desire especially to commend the faithfulness and ability of Rev. Collins Stone, principal, and of his predecessor, Mr W. Turner, who was for forty-two years connected with the Asylum.

“The teachers are cultivated, patient and faithful; the pupils cheerful and well cared for. The various legislative committees in past years and the board of state charities have uniformly approved of the general management of the institution, the latter differing only in opinion upon the method of teaching.”

In his Annual Address to the legislature in January, 1867, His Excellency the Governor used the following language respecting the

“PROVISION FOR DEAF-MUTES.

“For successive years the deaf-mutes of the Commonwealth, through annual appropriations, have been placed for instruction and training in the Asylum at Hartford. While, in the treatment of these unfortunate, science was at fault and methods were crude, in the absence of local provisions, this course, perhaps, was justifiable; but with the added light of study and experience, which have explored the hidden ways and developed the mysterious laws by which the recesses of nature are reached, I can no longer concur in this policy of expatriation. For I confess that I share the sympathetic yearnings of the people of Massachusetts towards these children of the State, detained by indissoluble chains in the domain of silence. This rigid grasp we may never relax; but over unseen wires, through a seemingly impassable gulf that separates them from their fellows, we may impart no small amount of abstract knowledge and moral culture. They are wards of the State. Then, as ours is the responsibility, be ours also the grateful labor. And I know not to what supervision we may more safely intrust this delicate and intricate task, than to the matured experience

which has overcome the greater difficulty of blindness superadded to privation of speech and hearing. To no other object of philanthropy will the warm heart of Massachusetts respond more promptly. Assured as I am, on substantial grounds, that legislative action in this direction will develop rich sources of private beneficence, I have the honor to recommend that the initial steps be taken to provide for this class of dependants within our Commonwealth. Should this policy be adopted, I have every reason to believe that it would eventually result in a permanent decrease of the present annual expenditure for their support."

This portion of the Address, and various petitions relating to the same subject, were referred to a joint special committee of the senate and house of representatives.

After protracted hearings, in which the origin, history, management and condition of the Asylum at Hartford were fully examined, and the conflicting claims of rival methods of teaching were largely and very ably discussed, the committee agreed upon certain general statements with reference to the topics presented, which they give as follows:—

"EXPATRIATION.

"Your Committee do not fully sympathize with His Excellency in his views of 'expatriation.' It does not seem to them that we ought to have an extreme sensitiveness about State lines,—nor that the distance to or inconvenience in reaching Hartford much exceeds any point within the State, and if the child is to be taken away from home, a difference of twenty miles more or less is unimportant. Our joint interest in the American Asylum may overcome our local pride, and we may well 'count the cost,' if not at the sacrifice of the best interests of the pupils. At the same time we agree that, 'we must consider not how we can have the cheapest instruction, but how we can have the best.'

"The facilities and long experience of the Hartford institution ought not to be overlooked, unless greater advantages can be shown from a new public institution than have been made apparent to your Committee.

"EARLIER EDUCATION.

"Your Committee are entirely agreed, that deaf-mutes should have an opportunity for earlier education than is now afforded at the Hartford Asylum. The two younger classes there now average eleven and twelve and a quarter years. While the managers of that institution believe that home influence is best until a child is eight years of age, we are by no means certain that they would not consent to receive younger pupils, if our State did not limit the term to six years. In the meantime,—

"'Private Munificence,' alluded to in the governor's address, represented by a large-hearted citizen of Northampton, to whom, let us be grateful in advance, proposes to establish and endow an institution for deaf-mutes at that place. Your Committee will recommend the incorporation of such a school and such legislation as will give pupils of tender years an opportunity for primary instruction in that or any other school which the governor and council deem suitable for the purpose.

"We ought to remark that it is understood that this new school is committed in advance to either system of deaf-mute education.

"This legislation will presume upon no change of our relations to the American Asylum, either in regard to Massachusetts pupils now there, or to any who may apply to be sent there hereafter, nor will it indicate any censure upon its management or opinions upon its system. At the same time it will give an opportunity for earlier education, and partly accomplish some of the other purposes of those who favor a change of policy."

"SUMMARY.

"Your Committee have said that they did not propose to make an extended argument upon methods, but briefly to submit the conclusions which they have arrived from the evidence submitted and upon which they base their recommendations.

"They find—

"1. That both the French and German systems have been taught for centuries.

"2. That both are taught in all the principal deaf-mutes schools in France and other countries, except in Germany and in the London institution, where 'articulation' is chiefly relied upon.

"3. That the sign language and manual alphabet can be taught to all classes of deaf persons and deaf-mutes, and are the most effectual means of communicating information to a large majority of such persons.

"4. The advocates of both systems admit that 'articulation' can be taught to some deaf-mutes, but not to all—but differ as to the number. It is a question of proportions. The fact that it has been adopted by so many of a portion of the schools throughout the world, seems a strong argument against its exclusive use in any school intended for all classes of deaf-mutes.

"Your Committee believe, that to the majority of those congenitally deaf, or who lost their hearing in infancy, it cannot be successfully taught, but that it can be to the majority of semi-mutes and semi-deaf persons.

"5. That the ability to articulate is so great a blessing that it ought to be retained or restored, if there be a possibility of doing so, even at the sacrifice of some other advantages. That the earlier the effort is made, the greater the hope of success.

"6. That success depends in some measure upon faith in either theory; and that the danger is that the advocates of each will be too much wedded to their favorite method. But that no public school ought to be exclusively devoted to either.

"7. That lip reading or lip signs, (it is really but another sign language,) may be taught to nearly all pupils, and there does not seem to be any necessary connection between it and 'articulation,' nor does it appear why it may not be learned by children entirely incapable of articulation; or be taught with or by the manual system or *vice versa*.

"8. That the evils of 'aggregation in intensifying an infirmity,' do not seem great enough to recommend the abandonment of large institutions, or to counterbalance the advantages which they offer.

"9. That a small number only can be taught lip-reading by one teacher, and that when learned it can be made available only in a favorable light and at short distances."

In conclusion, the committee recommended the passage of an "Act to incorporate the Clarke Institution for Deaf-Mutes at Northampton," and also the Act given above.

The Clarke Institution for Deaf-Mutes was duly organized at Northampton in August last, and was opened for pupils in October. Miss H. B. Rogers was made the principal, and her school at Chelmsford was made a part of the new institution.

As the Act provides, five pupils were nominated by the Governor, with the approval of this Board, as State pupils in the school at Chelmsford; and six others have, in like manner, become members of the Clarke Institution. The five sent to Chelmsford were each eight years of age, and of the six sent to Northampton, two were five, two seven and two nine years of age.

The 3d section of the Act makes the education of the deaf-mutes at either institution "subject to the direction and supervision of the board of education."

The reasons which led the committee to recommend this change are thus stated:—

"Your Committee find the deaf-mute pupils of the State included among the 'dependent classes.' In this connection they desire to say, that the policy and practice of the Commonwealth is, to give every child an education, and attendance upon school is compulsory between certain ages. No exception is made as to his ability or infirmity, and the doors of a school are open in every district to every child. But the teacher, representing

the State, finds at the door a deaf-mute child, whom he is incompetent to teach, or to whom he is unable to devote time enough to teach. His heart is full of sympathy, and he says to the child: 'God has denied to you the power to acquire our system of education, or rather, has denied to me the ability readily to adapt our system to your infirmity, or to inaugurate and carry out a system fitted to your necessities. But you have a right to an education, nevertheless.'

"The Commonwealth recognizes this right, but says: 'While it is neither economical nor convenient to teach you at home, we must not deny to you the privileges accorded to other children, and will send you to an institution adapted to your necessities;' and so the child becomes a 'ward of the Commonwealth.' He is a ward, just as [much, and no more, than any other child attending a public school. True, it may be said, we 'support' the child during his term at the Asylum; but need we do so if we educate him as we do other pupils, at his own door? His parents would then provide for him as they do for their other children. For our convenience, and for economy's sake, we adopt a special course to educate him. The parent pays his portion of the school tax. We deprive him of the society of his child, loved the more because of his infirmity, but we ought not longer to call that child a charity pupil.

"With these views, as the care of the Commonwealth over her deaf-mutes seems to be for purposes of education, and not of support, your Committee will recommend that they be hereafter under the supervision of the board of education, who have charge of the educational interests of the State.

"This recommendation grows out of the views heretofore indicated, and of the frequent complaint that this class of pupils are now associated in an annual report with the paupers, criminals and charities of the Commonwealth. But we desire most emphatically to state, that we intend by this recommendation no reflection upon the board of state charities, who have hitherto had this care."

In discharge of the duties imposed by the Act, a committee of this Board, Messrs. Seelye, Philbrick and the Secretary, have visited both institutions and found them in successful operation; the one at Northampton using the method often known as "articulation" and "reading from the lips," while at the Asylum the sign method was used as heretofore.

The number of pupils aided by the State in the Asylum at Hartford, January 1, 1868, was 103, ten of whom were admitted during the year 1867. The amount of money drawn from

the treasury for their support was \$19,610.31, at the rate of \$175 for each pupil per annum, which "covers every expense except for clothing, and, in case of sickness, the physician's bill; and entitles each pupil to tuition, board and supervision during the year, including board for vacation, if they desire it. Most go home in the vacation, though many who are poor, or have no homes, remain."

A complete catalogue of the Massachusetts pupils, with their places of residence, age at the time of admission, the date of admission, and the causes of deafness, will be found appended to this Report; also interesting extracts from the last annual report, relating to the origin, history, objects and work of the institution. [Appendix, A.]

The amount paid from the treasury for the support of State pupils at Miss Rogers' school at Chelmsford, during the year 1867, was \$1,079.15, and there has been paid to the Clarke Institution, \$787. A report made by the president will be found in the Appendix, [B.] containing in full the information required by the statute to be communicated to the legislature, and a full account of the origin, plans and purposes of the institution.

It is proper to remark that it is not the intention of the Board, nor of the Secretary, to express any opinions or to enter upon any discussions, relative to the comparative merits of the methods of instruction practised by either of the institutions above named. The connection has been too recent to allow a proper investigation of the facts bearing on the question, and of too general and slight a nature to give the Board any practical control over the matter, since both institutions are independent corporations, having their own boards of control, and one of them in another State. For any statements, reasonings or opinions on these topics, which may be found in the reports hereto appended, the Board assumes no responsibility whatever.

SCHOOL FUND.

Inasmuch as the amount and productiveness, as well as the security of this fund is a matter of great interest, I have annually given some account of it.

Its condition on the 1st instant and the changes made during the year are as follows:—

amount of the fund January 1, 1867,	\$2,001,450 8
received for unexpended balances,	\$1,007 85
received for unexpended moiety of	
income,	4,685 63
received 3 per cent. dividend in stock	
of Western Railroad at par,	172,860 00
	<hr/>
	178,526 4

Total amount of the fund January 1, 1868, . \$2,179,976 8

the receipts for the year on account of the principal, including the above additions, were,	\$223,212 6
the payments on account of investments,	205,916 0
	<hr/>
Balance of principal in cash on hand,	\$17,296 6

The investments are as follows :—

notes and bonds of cities and towns, at 6 per ct.,	\$265,070 0
notes, &c., &c., at 5½ per cent.,	32,500 0
notes and bonds of cities and towns, at 5 per ct.,	47,000 0
dividual notes, at 6 per cent.,	15,000 0
ate of Maine Scrip, at 5 per cent.,	125,000 0
assachusetts Scrip, at 5 per cent.,	633,000 0
assachusetts Scrip, at 6 per cent.,	103,000 0
nited States 5-20 bonds, at 6 per cent.,	30,000 0
otes and Mortgages, Back Bay Lands, at 5 per ct.,	146,481 6
estern Railroad Stock, 7,491 shares,	765,628 5
	<hr/>
	\$2,179,976 8

In the last item the investment in Western Railroad stocks argued with the premium paid on shares purchased in 1866 and 1867, amounting to \$16,528.50.

the investments bearing 5 per cent. interest are,	\$951,481 6
“ “ 5½ “ “ “	32,500 0
“ “ 6 “ “ “	413,070 0
shares Western Railroad Stock, par,	749,100 0

the receipts from interest and dividends from June 1, 1866, to January 1, 1867, were	\$57,029 0
from January 1, 1867, to January 1, 1868,	139,259 0
	<hr/>
	\$196,288 0

It will be seen that nearly one-half of the principal, or \$951,481.66, yields but 5 per cent. interest. \$633,000 of this amount is Massachusetts Scrip, the interest of which is paid to the school fund in currency, while to all other holders the payment is made in gold. By this means the fund has already suffered a loss of nearly \$90,000. I respectfully suggest that the same good faith which the Commonwealth observes towards her creditors in our own and in foreign lands, should also be kept with the fund sacredly dedicated to the encouragement of "literature and the sciences and the seminaries of them."

I submit that this is required not more by good faith than by the dictates of a sound policy. Annually sharp language is used respecting the doubtful faith of certain creditor corporations which take advantage of the laws of Congress to pay in currency that which the Commonwealth is bound, for their benefit, to pay in gold. Is it the dictate of a wise policy to practice in one case that of which she makes complaint in another?

I am aware of the show of reason attempted in defence of the practice. While the indebtedness is admitted, it is said that the payment would be but the taking from one pocket and putting into another, and so the obligation to pay is resolved into a mere matter of convenience. To this I answer that if the statement be true, it might be very well, for the sake of a good example, to reverse the process, and to pay back from the receiving to the losing pocket, at least till a balance is restored. But the assumption is fallacious. The pockets are not alike. A brief statement will make this matter plain.

The functions of government are performed; laws are enacted; justice is administered; domestic peace is preserved, and public security defended, for the common welfare, and at the common expense; that is by equal taxation upon all persons and property within its jurisdiction. But the general education of the whole people, is no less than these a matter which concerns the general welfare. The Public Schools are supported for the common benefit—for the good of the "body politic," and not of particular persons or places—and hence, on strict principle, should be maintained at the common expense—by the equal contributions of all persons and their property, who compose the State.

But with us a different system has prevailed from the beginning; the State has, for good reasons, devolved upon each city and

town the duty of educating its own population. The burdens of taxation thus imposed exhibit great inequality in different sections of the Commonwealth. In illustration of this inequality, I will give the results of a comparison between two counties, Suffolk and Franklin, one a commercial and the other an agricultural county, in respect to school population, valuation, and the rate of taxation for the support of schools:—

In Suffolk—

The valuation in 1865,	\$387,276,700 00
No. of children between 5 and 15, in 1866,	38,848
The amount of valuation to each child,	\$9,969 00

In Franklin—

The valuation in 1865,	\$13,048,120 00
No. of children between 5 and 15,	6,605
Amount of valuation to each child,	\$1,975 33

That is, the amount of taxable property represented by a single child in Franklin, is less than 20 per cent. of the amount represented by a child in Suffolk.

The same inequality appears in a comparison of the percentage of taxation in the two counties. In Suffolk County, the amount is 1.63 mills in the dollar, (in Boston alone it is 1.56 mills,) while in Franklin it is 3.01 mills.

A comparison of other counties or towns will disclose everywhere similar inequalities.

In many of the States of the Union the practice prevails of levying a uniform tax on all taxable property in the State for the support of schools. Thus, New York lays a State tax of $1\frac{1}{4}$ mills, which, when collected, is used for general educational purposes and distributed amongst the cities and towns for the support of schools, in like manner and on conditions similar to those by which the income of our school fund is distributed.

Now, the equalization of burdens which is accomplished in New York by a State tax, is, in a slight degree, effected with us by the use of one moiety of the income of the school fund for the training of teachers and other educational purposes which are for the common benefit, and by dividing the other moiety among the towns in a manner specially favorable to the least populous.

From this point of view it is clear that the school fund is not a "pocket" in any such sense as is implied. It is rather a sacred deposit, to be kept distinct from the State treasury, and forever devoted to the uses of education,—uses the highest and most sacred known to the State. I earnestly, yet respectfully urge, that with such a fund, devoted to such uses, there should be no disposition to tamper.

TEACHERS' INSTITUTES.

During the year seven Institutes have been held,—two in the spring, and five in the autumn,—at the following places and times :—

At Needham, . . .	Apr. 22d, 5 days ;	number attending, 53
Lowell, . . .	" 29th, "	" " 252
Marlborough, . .	Oct. 21st, "	" " 210
South Hadley, . .	" 28th, "	" " 255
North Easton, . .	Nov. 4th, "	" " 110
Winchendon, . . .	" 11th, "	" " 137
South Dennis, . .	" 18th, "	" " 89

Whole number in attendance, 1,106

Another, to make the full complement contemplated by the usual appropriation of the legislature, would have been held in October, but was prevented by the annual meeting of the State Teachers' Association in that month. These Institutes were held in six different counties, and the average number of towns represented by the teachers attending those held in the autumn was twenty-one. At most of these Institutes there were twenty-seven teaching exercises, and five evening lectures of a more popular character, yet intimately connected with the general subject of education. Besides the number, given above, of members in attendance, most of the sessions during the day were attended by many of the citizens, and the evening lectures were delivered to very large and interested audiences.

Regular instruction in the subjects usually presented at Institutes was given by Professor William Russell, Messrs. Niles, Walton, Holt and Bowler ; occasional teaching exercises, or lectures, were given at the daily sessions by Messrs. Thompson, Sharpe, Gage, Monroe, Hagar, Dickinson, Boyden, Miss Mitchell, and the Agent, and Secretary of the Board. The evening lectures

re given by Messrs. Gage, Monroe, Niles, Hagar, and the Agent,
l Secretary.

An increasing interest has been manifested in the Institutes
ring the year, by members of school committees in the several
ns where they have been held, many of whom were constant
l attentive listeners at a greater part of the sessions. In one or
o instances several members of school committees came from
oining towns with a large number of teachers, and remained
se days, having closed the schools for this purpose, and contin-
g to the teachers their usual wages. In a few instances, how-
r, teachers have not been permitted to attend the Institutes
d in the towns in which they were employed, without a reduc-
a of their wages for the time being.

It is a gratifying fact that in some places where much indiffer-
e was manifested at the opening of the Institute by members of
ool committees, and many of the citizens, and the prospect of a
uccessful Institute seemed very discouraging, very soon an
erest began to develop itself, and to grow stronger each day.
d at the closing exercises remarks have been made, and resolu-
ns unanimously adopted, expressive of the warmest thanks o
e committees, teachers and citizens generally, for the benefi-
y had derived from the Institute, and for the highly favorable
fluence they believed it would exert upon the interests of popu-

education in their several towns. The wish, too, is often
pressed that another Institute may very soon be held in their
vn, and invitations for Institutes come much more frequently
m towns where they have previously been held, than from
ers which have never experienced their benefits. Those who
o interested in securing for their towns the meetings of the
stitute, sometimes find it rather difficult at first to obtain for the
chers the gratuitous accommodation generally accorded to
m, but when the real object of the Institute, and the character
those in attendance, become known, more places of accommoda-
n are frequently offered than there are persons to accept them.
id a gentleman to a member of the local committee, at the close
one of the Institutes, "My family has entertained two teachers
d if another can be held here next year, send us four." "W
e the spirit of these teachers," said another, whose generou
spitality had been extended to four of their number; "nex
ae send us six, or even eight." At the close of another Institute

the chairman of the school committee publicly declared that the exercises of the week had been of greater advantage to the interests of education in the town, than the keeping of all their schools for a whole year would be, and that he regarded the Institute as one of the most effective agencies in the cause of education which the State has put in operation.

From another town in which one of the Institutes was held, a letter has been received from a member of the school committee, formerly a State senator, in which he says: "With the exception of the Institute held in this town in 1856, under the direction of Governor Boutwell, we have had nothing of any kind equal to the Institute held this fall, with reference to promoting an interest in the matter of education. I have taken a good deal of pains to ascertain the opinions of citizens here who attended the Institute, and, without exception, they spoke in terms of unqualified praise. I have asked farmers and mechanics, persons of no great culture, but persons of good sense, and the reply has invariably been, 'We liked it.' One, who I did not suppose would be interested in such matters, said that 'the lectures were worth a thousand dollars to the town.' The lectures of the Institute were invariably simple and plain, and worth more, as a matter of instruction, than some lectures that have cost us a high figure. I say emphatically that the Institute was a perfect success, and that not only the inhabitants of the town were very much gratified, but that the teachers, of both sexes, who came to attend, went away highly satisfied. I do not know that it would be worth while to have an Institute here next year, but I think that another in two years' time would meet with the same success."

The chairman of the school committee in one of the towns, says:—

"I write a few lines to show you not only my own opinion, but the general impression in this place, in regard to the Teachers' Institute, held here this autumn.

"1. The exercises. These were of a high order. The instructions given to the members of the Institute were on important topics, and were definite, lucid, and as full as the time would justify. No person having the natural qualifications of a teacher could fail to learn much in regard to the best methods of instruction and government.

"2. The general lectures, that is, those relating to ventilation, school laws and government, gave general satisfaction. Those relating to geography, history and the basis of national authority, were sound and healthful.

The information thus obtained has enabled me in "conferring with teachers and committees, and lecturing upon subjects connected with education to adapt my efforts to meet the circumstances and wants of the several towns visited. The attention given to the general deportment of scholars, their manner of studying and of reciting, their attendance and absence, and many other particulars suggested by the teachers, have furnished me appropriate topics for the remarks which the Agent is expected to make in each school visited, with the hope of exciting the scholars to greater diligence in study, to more prompt and constant attendance, and, in general, of leading them to a higher appreciation of the advantages which are so freely opened to them in the Public Schools of our State. The impression is, that by such visits to separate schools, and by efforts specially directed to meet their wants, although requiring more time and labor than would appear from any statistical report, much more good can be accomplished by an Agent, than by meeting teachers and scholars in large numbers, when he must talk on general subjects in a general way, and no one feels particularly addressed, and comparatively little good results. In towns of extensive area it is very frequently difficult to get together all the teachers and any considerable number of scholars, from the numerous widely-scattered districts. My visits have always been welcomed by the teachers, and whatever suggestions I have been led to make in regard to improved classification, methods of teaching and of discipline, etc., have been very kindly and often gratefully received, and, in several instances I have subsequently learned from the teachers themselves, have been once adopted, with decided benefit to the schools.

In every instance, too, I have received a cordial welcome from the members of the school committee in the several towns visited,—they call on me on my arrival, and one or more of them going with me from school to school. They have consulted me on many topics connected with their duties, and efforts to make the schools more efficient, and have sought information in regard to what other towns are doing in educational matters.

In many towns the committees are composed of men who, while desirous of promoting the highest interests of the schools, have had no experience as practical teachers, and are but imperfectly informed in respect to the duties of their office. Of the relative rights and duties of superintendents and prudential committees they are comparatively ignorant; with the methods of teaching, and of school government, they are not sufficiently familiar to assist by their counsels the young and often inexperienced teachers, who, with no professional training, and with no very definite ideas of the teacher's duties, have been led to assume them; and on many other matters connected with their perplexing and responsible duties they are equally uninformed. I have known of some towns losing their school

of the appropriation from the State school fund, because the committee did not know how to fill out the blank certificate, which the statute requires shall annually be made to the Board of Education. I have known instances of members of school committees, ignorantly supposing that they had a legal right to do so, inflicting corporal punishment upon refractory pupils, and thus rendering themselves liable to prosecution. I have heard committees frequently complain that they could get no appropriation from their towns for procuring a globe, outline maps, and other indispensable requisites for the school-room, not knowing that the statute authorizes them to expend one-fourth part of the amount received by the town from the State appropriation for these very purposes, and that the neglect to procure them is chargeable directly upon themselves. School-houses are sometimes erected, and old ones remodelled, without a clear conception of what is needed, and without any of the important improvements in respect to ventilation, size and lighting of rooms, convenience, style, &c., &c., which are to be found in the best constructed school-houses of modern times, merely because the committees or towns have no particular information on the subject, and so retain in the new buildings many of the highly objectionable features of the old ones.

These are a few of the subjects on which many school committees desire to consult one whom they presume to be familiar with all matters of policy connected with the management of schools, and who in many ways can aid them by his presence and counsel. The abolishing of the district system in many towns, and the erection of better school-houses, and the proper grading of the schools, consequent upon it, devolve upon committees new duties, in respect to which the advice of one familiar with these matters is much desired. In several towns I have, for this purpose, been requested to repeat visits, and have found it necessary to do so, in order to make myself so familiar with their local circumstances and wants that I might be able to recommend the best plan for them to start with, and the best means of carrying it out successfully.

In my public addresses I have sought to awaken an increased interest in popular education among the people, commending them for what they have done, pointing out deficiencies when they exist, and indicating means for the improvement of their schools. Notices, when practicable, have been sent in advance of a visit, which have been given from the pulpits, and in the schools, and printed notices have been posted in different parts of the town. Generally, large and interested audiences have attended the evening lectures, and frequent requests have been made for another similar meeting.

In many of the towns, especially where the district system still exists, there is a sad waste of money, time and privileges. There are numerous districts where are found not more than half a dozen school children, for

whom a separate school is maintained, and I know of one town in which were maintained three schools, during the summer and winter months, for only two, five and eight children, respectively, being the entire number of children of suitable school age resident in these three districts. In some cases, it is true, the distance which the children must go to attend the school in an adjoining district may be a valid objection to their doing so, but would it not be a more economical arrangement, and secure to the children longer schools and greater advantages, to hire their conveyance to and from school, if need be, and expend upon one school the money now expended upon two or more, rather than to have so many separate schools for so limited a number?

It is a cheering circumstance, and full of promise for the future, that during the year an unusual number of school-houses have been erected in many parts of the State, creditable in the highest degree to the intelligence and liberal public spirit of the towns and cities that have erected them. In respect to their architecture, location, size, ventilation, furniture and furnishings, convenient arrangements, play-grounds, and every important requisite, many of these are all that can be desired. Much, however, still remains to be done in this direction. The old school-house so humorously described in "The District School as it was," is but a representative of numerous similar buildings that I find still used for the same purpose, and which are a disgrace to the towns which tolerate them. One of our Massachusetts soldiers described a school-house which he saw in Virginia, which, after a close examination, he valued at four dollars twelve and half cents. I have in my "Note Book" descriptions of several in our own State of but little more value; some of which, entirely destitute of a globe, maps, clock, thermometer, chairs for visitors, and everything else except the old, unpainted, mutilated desks and seats, an old box stove, a broom and the remnants of the dictionary furnished by the State, are not, everything included, worth \$25, for any purpose whatever. Such buildings are, with few exceptions, found in towns that have not yet abolished the district system. Where such indifference to comfortable and suitable accommodations for the children prevails, I find, as might be expected, a similar neglect in regard to other matters connected with education. Incompetent teachers are employed, merely because they can be obtained for less wages; parents neglect to visit the schools, the attendance of the children is very irregular, and the general results are such as under such circumstances might reasonably be expected. But upon these and numerous kindred topics which my observations during the year suggest, I cannot now dwell, as I fear I have already exceeded the space allowed me.

Before closing I desire, in behalf of the teachers and others who have attended the Teachers' Institutes during the year, to present my grateful acknowledgments to the officers of the following railroads who have author-

ized me to issue free return tickets to those who have paid an advance fare, viz.: The Old Colony and Newport, Cape Cod, Boston and Albany, Worcester and Nashua, Connecticut River, Boston and Lowell and branches, Fitchburg, Vermont and Massachusetts, Cheshire, and Boston, Clinton and Fitchburg Railroads.

ABNER J. PHIPPS.

BOSTON, January, 1868.

NORMAL SCHOOLS.

The reports of the visitors give very full and interesting accounts of the year's work and the present condition of these schools. Having, in my last report, devoted considerable space to a statement of the character and object of the Normal Schools, the methods of instruction pursued in them, the practical relation which they hold to the Common Schools of the State, and the estimation in which the graduates are held as teachers, by the intelligent friends of education, little need be said on these points at the present time. It gives me unfeigned pleasure, however, to be able to state, that another year's experience has added strength to the testimony then given. Indeed, in no former year of my acquaintance with them, has the evidence of their increasing usefulness been more satisfactory than in the past year. This has appeared in the high rank taken by the graduating classes, not only in scholarship, but especially in a thorough acquaintance with the principles of their chosen profession; and also in the higher place which the Normal teachers have won in the public confidence and esteem.

The Normal Schools were originally established and have ever been conducted with the view of furnishing well-trained teachers for our Common Schools; and in this respect they have been eminently successful, fully meeting the expectations of their founders and guardians. In fact, a very large majority of the graduates have taught and are now teaching in the District Schools of the country towns, or in the Grammar Schools of the larger villages and of the cities; while a smaller number have been placed in higher positions, as principals or assistants in High Schools.

But it cannot have escaped the notice of any who are conversant with the condition and wants of our Public Schools, that, within a few years, a demand has arisen for a class of teachers, both male and female, who have a thorough Normal training, added to a higher education—including the ancient and modern languages

and literature, the higher mathematics, the different branches of natural science, the evidences of our common Christianity, etc., etc.—than our Normal Schools can give. This demand is rapidly increasing, and it appears to me that it has now become so general and so urgent, that the proper measures for supplying it ought to be devised without longer delay.

The attempt was made to meet the demand for male teachers of the High Schools by the passage, in 1853, of the Act relating to State Scholarships. By this Act the sum of \$4,800 was annually paid for the aid of forty-eight young men to be selected by this Board and educated in our colleges, on the condition that after graduation, they would teach in the Commonwealth a period equal to that during which they had received aid. After a trial of twelve or thirteen years, it clearly appeared that the law had failed to secure the end proposed and confidently expected. True, it gave a helping hand to many worthy young men, who otherwise would have failed to obtain that education which has enabled them to become useful and honored citizens in the various walks of life; but by far the larger number failed to become teachers, and this arose from no unwillingness on their part, in most cases, to fulfill their obligations to the State. The fault was not so much in the young men as in their training. Although showing ample proof of respectable scholarship, still they had not received that professional training which only the discipline of the Normal School and of actual experience can give, and were therefore excluded from eligible positions in the schools of the higher grade.

Accordingly, in 1866, the law was repealed, it being the prevailing opinion that the object sought to be secured by its passage could be more satisfactorily reached through the agency of the Normal Schools. With this opinion I fully agree; and the question is as to the best manner of employing that agency.

Shall another Normal School of a higher grade be established and equipped for a full course of four or five years' study, or for a supplemental course of two years, to which the graduates of the present schools may resort, or shall one of these schools be raised to a higher grade in order to do this work; or, again, shall all the existing schools be supplied with such additional teachers and apparatus as shall enable them to furnish, in connection with the present course of study, instruction in the higher branches of learning?

The establishment of another school is open to the objection that it will require a large outlay for land, buildings, apparatus and the support of an independent body of teachers. The selection of one of the existing schools would be a delicate, if not an invidious task, and involve serious difficulties with respect to location. •

After considerable inquiry and reflection, I am satisfied that the plan last suggested, has less difficulties than the others to overcome, and that it is entirely feasible. It will be far less expensive, and more convenient for the different sections of the State. It will avoid all difficult questions of selection and of locality, and, moreover, secure to the pupils a uniform system of instruction in the principles and methods of teaching from the beginning to the completion of their course. I have but little doubt that a four years' course of study can be arranged so as to be taught in connection with the present course, with the aid of a single first-class teacher, or, at the most of two such, in each of the schools. If I am not mistaken in this opinion, the expenditure will hardly exceed the amount heretofore incurred in supporting the State scholars in college.

If the experiment prove to be successful, our Normal Schools will at once rank with the best endowed schools in the country, in respect to the facilities afforded for a higher education, as they now most certainly do in respect to discipline, philosophical methods and thoroughness in teaching. Students will be attracted to them in greater numbers, and the demand for well-trained teachers in every grade of our Public Schools be in a good measure supplied.

Without attempting an exhaustive discussion I have made these suggestions, in the hope of attracting attention to this matter and of securing for it such a consideration as its importance demands.

TOWN REPORTS.

I invite especial attention to the selections which I have made from the reports of school committees. The examination of three hundred and thirty-five of these reports is not a slight task, yet it is one of the most agreeable and instructive which I am called upon to perform. The ability and the practical wisdom which these pages embody, the facts with which they abound, occurring under the observation and in the actual experience of the authors,

fully confirm the opinion which I have heretofore expressed, that there can be found in no other community a larger number of practical and cultivated minds engaged in the management and supervision of its Public Schools than in our own. The testimony of distinguished educators in our own and in foreign lands is alike uniform and emphatic as to the ability and practical wisdom of this body of reports.

Almost every topic within the scope of our system of public instruction is treated of with greater or less fulness and ability. The organization of the towns for school purposes, and of the schools; the qualifications, rights and duties of teachers; the range and relative importance and plan of the studies to be taught; the methods of teaching; the discipline and government of the schools, not omitting the mooted question of corporal punishment; the relation which our educational system sustains to the prosperity and stability of our civil institutions, and the connection of intelligence and sound learning with a practical and vital Christianity,—these are some of the topics which have engaged the attention of the authors of these reports; and the discussions and even the brief hints on these and kindred topics will amply repay a careful perusal.

GENTLEMEN:—In concluding this brief and imperfect Report, wherein the homely and practical matters of a business nature have claimed my attention, to the exclusion of higher and more inviting themes, I beg to express to you my sincere gratitude for your kind appreciation of my labors during another year of service in behalf of the great cause committed to your hands. It is, indeed, a high and sacred trust, worthy to command, as in the past it has commanded, the service of men endowed with the loftiest powers of mind and heart. It is to me a source of satisfaction and of relief, that *any* honest service in its behalf, however humble it may be, cannot be performed in vain.

JOSEPH WHITE.

BOSTON, January, 1868.

APPENDIX

TO THE

REPORT OF THE SECRETARY.

[A.] AMERICAN ASYLUM FOR THE EDUCATION OF THE DEAF AND DUMB, AT HARTFORD, CONN.

73

BOARD OF EDUCATION.

List of the Beneficiaries of Massachusetts, January 1, 1868.

NAMES.	Residence.	Age on Admission.	Admission.	Cause of Deafness.
1. Wendell P. Porter,	Somerville, .	9	May 18, 1859,	Congenital.
2. John O'Hara,	Milford, .	10	Sept. 19, 1860,	Ulcers in head, at 1 year.
3. Isaac N. Soper,	Lowell, .	10	18, 1861,	Congenital.
4. Ira H. Derby,	South Weymouth, .	11	18, 1861,	Congenital.
5. Eldora M. Howe,	Marlborough, .	10	20, 1861,	Sores in head, at 8 months.
6. James A. Powers,	Salem, .	11	March 10, 1862,	Dropsy in head, at 5 months.
7. George D. Johnson,	Erving, .	10	Sept. 15, 1862,	Whooping cough, at 3 years.
8. Sylvia B. Atkins,	Chatham, .	10	16, 1862,	Congenital.
9. Thomas Fahy,	Pittsfield, .	9	17, 1862,	Congenital.
10. Lauretta J. Richardson,	Mansfield, .	10	16, 1862,	Scarlet fever, at 1 year.
11. Batey A. Munroe,	Rehoboth, .	9	16, 1862,	Congenital.
12. Nathan L. Pond,	Milford, .	10	17, 1862,	Lung fever, at 10 months.
13. Clarinda J. Flagg,	Natick, .	11	17, 1862,	Scarlet fever, at 6 years.
14. Mary E. Murphy,	Boston, .	8	17, 1862,	Scarlet fever, at 2½ years.

16. William Coughlin,	.	.	.	.	.	Fitchburg,	12	Sept.	17, 1862,	Congenital.
17. Stephen Cropan,	.	.	.	.	.	Fitchburg,	11	17, 1862,	Brain fever, at 8 years.	
18. Sarah F. Toole,	.	.	.	.	.	West Cambridge,	10	17, 1862,	Discharge of cannon, at 2 years.	
19. Willie S. H. Peterson,	.	.	.	.	.	Plymouth,	8	18, 1862,	Congenital.	
20. Othello D. Hayden,	.	.	.	.	.	Stoughton,	11	15, 1863,	Scarlet fever, at 2½ years.	
21. Emma A. Vincent,	.	.	.	.	.	South Adams,	15	15, 1863,	Sores in head, at 5 months.	
22. Elbridge A. Wellington,	.	.	.	.	.	Wayland,	11	16, 1863,	Croup, at 15 months.	
23. Andrew P. Joselyn,	.	.	.	.	.	Foxborough,	9	15, 1863,	Fall and sickness, at 3 years.	
24. Ella M. Peltier,	.	.	.	.	.	Cambridgeport,	11	16, 1863,	Inflammation in head, at 6 months.	
25. Charles H. Martin,	.	.	.	.	.	Salem,	9	16, 1863,	Scarlet fever, at 5 years.	
26. Mary Carey,	.	.	.	.	.	Boston,	9	16, 1863,	Congenital.	
27. Orlando A. Smith,	.	.	.	.	.	Cambridge,	10	16, 1863,	Congenital.	
28. Matthew Leary,	.	.	.	.	.	Boston,	12	16, 1863,	Congenital.	
29. Arthur F. Gale,	.	.	.	.	.	Charlton,	10	16, 1863,	Typhoid fever, at 5 years.	
30. John Butler,	.	.	.	.	.	Boston,	10	16, 1863,	Sickness, at 3 months.	
31. Francis McGin,	.	.	.	.	.	Boston,	10	21, 1863,	Convulsions, at 2 years.	
32. Alvah H. Harris,	.	.	.	.	.	Neponset,	10	Oct. 16, 1863,	Fever, at 2 years.	
33. Mary E. Eaton,	.	.	.	.	.	East Salisbury,	13	Sept. 16, 1863,	Congenital.	
34. Eliza O'Hearn,	.	.	.	.	.	Tewksbury,	12	18, 1864,	Unknown.	
35. James Nelson,	.	.	.	.	.	Tewksbury,	12	18, 1864,	Unknown.	
36. Ellen L. Tilton,	.	.	.	.	.	Cheshire,	12	18, 1864,	Lung fever.	
37. George Macintosh,	.	.	.	.	.	Canton,	9	18, 1864,	Whooping cough, at 2 years.	

BOARD OF EDUCATION.

38. Henry O. Philbrook,	Charlestown,	15	Sept.	14, 1864,	Ulcers in head, at 10 months.
39. Samuel S. Cross,	Beverly,	10		14, 1864,	Congenital.
40. Bridget Fahy,	Pittsfield,	17		14, 1864,	Congenital.
41. Marion L. Taft,	Worcester,	8		14, 1864,	Scarlet fever, at 5 years.
42. George W. Acheson,	West Randolph,	11		14, 1864,	Congenital.
43. Charles Acheson,	West Randolph,	10		14, 1864,	Congenital.
44. Sylvester W. Wentworth,	Ipswich,	12		14, 1864,	Scarlet fever, at 9 months.
45. Mary J. Lee,	East Longmeadow,	7		14, 1864,	Water on brain, at 3 years.
46. Wilbur N. Sparrow,	Eastham,	11		15, 1864,	Scarlet fever, at 5 years.
47. Jared Mayhew,	Chilmark,	11		15, 1864,	Congenital.
48. William M. Gardner,	Hardwick,	9		23, 1864,	Cold, at 2 years.
49. Elizabeth A. McDonough,	Russell,	11	Oct.	6, 1864,	Sickness, at 1 year.

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List of Beneficiaries of Massachusetts—Concluded.

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98. Annie Monahan, . . .	Lowell, . . .	10	Sept. 11, 1867,	Unknown.
99. John O'Neil, . . .	Palmer, . . .	8	16, 1867,	Congenital.
100. Orison Daniels, . . .	North Adams, . . .	19	12, 1867,	Inflammatory rheumatism, at 2 years.
101. Albert C. Hargrave, . . .	Boston, . . .	10	16, 1867,	Brain fever, at 3 years.
102. Mary E. Carroll, . . .	South Boston, . . .	10	28, 1867,	Congenital.
103. Edward W. Frisbie, . . .	Charlestown, . . .	11	26, 1866,	Unknown.

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in his new profession, and soon brought his art into the favorable notice of benevolent and scientific men. In 1783, his school was removed to Hackney, near London, where it was continued till his death, in 1806. At the time of Mr. Gallaudet's visit, there were but three institutions for the education of deaf mutes in the British Isles: the London Institution, established in 1792 by Dr. Joseph Watson, a relative of the elder Braidwood; a school at Edinburgh, opened in 1810, under the care of John Braidwood; and one at Birmingham in 1814, under the charge of Thomas Braidwood, both grandsons of Thomas Braidwood of Edinburgh. The method of instruction adopted by the elder Braidwood was by articulation, and the other schools naturally followed in the track of their leader. Even at this early day, however, in spite of the enthusiasm created by the seemingly miraculous achievement of restoring speech to the dumb, observant men began to realize the difficulties of this system of instruction, and its unsatisfactory character in the case of a large class it was designed to benefit. The same objections to it as a general method of deaf-mute education, inherent in the system, were noticed then, as now. Dugald Stewart, whose account of the deaf, dumb and blind boy, James Mitchel, excited so much interest in the philosophic world, expressed his decided conviction that the benefits which articulation professed to confer upon the deaf mute were more apparent than real, and that it served rather to "astonish the vulgar," than to render him any valuable aid in his education.* The system of Sicard, then at the acme of his fame, whose weekly exhibition of his pupils in London was at that time drawing crowds of the nobility to his levees, was creating a sensation among intellectual men, and even thus early, the tide began to set in the direction of instruction by signs.

On arriving in England, Mr. Gallaudet naturally repaired to the London Institution for the desired instruction. His application was coldly received. Dr. Watson, though willing to furnish an assistant to return to this country and inaugurate the enterprise beyond the sea, would hardly consent to communicate his mysterious art to a stranger for this purpose. After much delay and prolonged negotiation, the best terms that could be obtained were, that after a trial of one month, "upon liking," the applicant might enter the Institution as an assistant, to remain on the usual terms, three years, unless Dr. Watson saw fit to release him before that time, as duly qualified. As "the usual terms," in addition to other duties equally agreeable, required thirteen hours confinement daily with the pupils, with the drudgery of supervision in and out of school, the terms were of course declined. The application at Edinburgh was equally unpropitious. Mr. Kinniburgh, the head of the Edinburgh school, received Mr. Gallaudet

* Trans. Roy. Soc. Edin. Vol. VII., p. 39.

with great cordiality, but could render him no assistance, having placed himself under bonds of a thousand pounds not to communicate his art to any person for seven years, and of these, three still remained.

The embarrassments thus thrown around the object of his mission at these points, were most Providential and fortunate. In consequence of these difficulties, Mr. Gallaudet was induced to accept the cordial invitation of Sicard, and accompany him to Paris to obtain the desired qualifications. We say this result was Providential and fortunate, for it proved that although instruction by articulation was the only mode of educating deaf mutes practiced in England at that time, yet this method was found, after faithful trial in the English schools, to be so unsatisfactory, that in the course of a few years they began, with one exception, to abandon it, substituting in its place instruction by signs. Of the twenty-three schools now existing in the British Isles, twenty-two use signs, and one articulation, as the medium of instruction. That the system, if it had been introduced here, would have proved any more satisfactory than it has there, we have no reason to believe. Indeed, the imperative demand of our people for something that is practically useful, would probably have led to its still earlier rejection. We were, however, saved the labor and loss of time which would have attended the trial of the system in this country, and enjoyed the immediate benefits of one which has proved by far the most successful method of educating deaf mutes that the world has yet seen.

Mr. Gallaudet returned to this country August 9th, 1816, bringing with him Mr. Laurent Clerc, a gentleman deaf and dumb from birth, one of the most distinguished pupils of Sicard, who had been for ten years employed as a teacher in the Royal Institution at Paris. Mr. Clerc had been educated entirely by signs, and was an excellent example of the value of this method. The first eight months after their arrival were occupied in passing through various portions of the country, exciting an interest in their work and raising funds. The striking illustration which Mr. Gallaudet took with him, of the extent to which the misfortune of deafness can be alleviated by education, excited unbounded astonishment. The assistant proved to be so intelligent, and to possess so perfect an acquaintance with both the French and English languages, that some persons were even disposed to be incredulous respecting the reality of the infirmity in his case, and to suspect deception. An amusing instance of this incredulity occurred during the visit to Quebec. Mr. Clerc was sitting in a book-store, occupied in reading. The proprietor, feeling some suspicion respecting the deafness of a man who could use the French language so readily and correctly, determined to satisfy himself by actual experiment, and going up quietly behind him, clapped his hands violently near his head. Though profoundly deaf, and perceiving no sound, Mr.

Clerc felt the rush of air, and immediately turned his head for the cause. This movement fully convinced the Frenchman of his ability to hear, and his politeness scarcely prevented his expressing, in decided terms, his sense of imposition.

The enterprise took a deep hold of the benevolent mind, and contributions flowed in liberally, especially from the New England States. The Governor of Connecticut, Mr. Wolcott, commended the work to public sympathy by a special proclamation, and encouraged collections in the churches. About \$12,000 were obtained previous to the opening of the school. This event took place, as has already been intimated, on the 15th of April, 1817, in the building now occupied as the City Hotel. The number of pupils at the opening of the school was seven, which was increased before the close of the year to forty-one, rendering necessary the employment of three additional teachers. Of these forty-one pupils, fifteen were from Connecticut, eight from Massachusetts, four from New Hampshire, one from Rhode Island, two from Vermont, two from New York, three from Pennsylvania, two from Virginia, three from Maryland, and one from Ohio. The impression was at first quite general, that one institution would suffice for the wants of the whole country, up to this time the census having made no enumeration of the number of deaf mutes. The mistake, however, was soon apparent, and in 1818, the New York Institution was commenced. The Pennsylvania school followed in 1820, and that of Kentucky in 1823.

A grant of land from the National Congress in 1819, secured the permanent usefulness of the Institution. This was obtained in response to a petition from the Board of Directors, presented and ably advocated by the Hon. Nathaniel Terry, and the Hon. Thomas S. Williams, from this city, who at that time represented Connecticut at the seat of government. The efforts of these gentlemen were warmly seconded by other prominent members from New England, and by the Hon. Henry Clay, the Speaker of the House. The grant gave permission to take a section of any unoccupied land in the territory of the United States, and selection was made of a tract of about 23,000 acres, lying in the State of Alabama. Although some years must elapse before the land could be sold, yet the Directors felt authorized by the possession of these means, to provide suitable and permanent accommodations for the growing school. A beautiful site comprising about seven acres, situated on a hill half a mile west of the city, was obtained. It was covered with fruit trees and valuable buildings, and was occupied at the time as a gentleman's country seat. The price paid was \$8,600. The foundations of a spacious edifice were laid, and the building pushed forward rapidly to its completion. In the course of the next ten years most of the land in Alabama was sold, and its proceeds made available. The labor and perplexity involved in this

ransaction were immense. It was most skilfully and judiciously effected by the late William Ely, Esq., of this city, to whose efficient management of this complicated and extended interest the Corporation are under lasting obligations.

The fund thus placed in the hands of the Directors, was unaccompanied with any restriction or condition whatever. It was given them to use according to their best judgment in promoting the education of the deaf and dumb. Without the least departure from this general object, they might have used it to build up a local Institution, retaining the local name. But the Board did not so purpose. They determined to extend the benefits of their fund as widely as possible, and with it to accomplish all the good in their power. The change from "The Connecticut" to "The American Asylum," which, as indicating this purpose, they secured in their corporate name, has before been alluded to in these Reports. In making the application, three reasons are given for desiring this change: first, that the original object of the Institution was to relieve this infirmity wherever found; second, the liberal contributions to its funds from individuals; third, the generous grant of the government—all rendering it proper, in their judgment, that the doors of the school should be thrown open to the unfortunate from all parts of the country. These liberal and catholic principles have governed the Board during the fifty years of its corporate existence. All who have entered the school have shared equally its advantages, no distinction being made between public and private pupils, or between those residing near and those coming from a distance.

As schools for deaf mutes began to be established in other parts of the country, deriving, in most instances, their heads, and in all, their systems of instruction from the Parent School, it became evident that the peculiar field of usefulness for the Asylum should be the New England States. Although pupils had already been sent to the school from these States, and in some of them legislative provision had been made for their support, yet no general arrangement had been effected by which all the deaf mutes of New England could have the advantages afforded by the liberal policy which had been adopted by the Directors. On the 25th of January, 1825, Commissioners appointed by the legislatures of the four Northern States of New England, met at the Asylum to take this subject into consideration. The object of this meeting was "to inquire into the state of the Asylum as respects its funds, the instruction, treatment and employment of the pupils, and to ascertain the terms and conditions upon which the deaf and dumb who might be sent from these States could be received." As the arrangement which was at that time consummated was of some importance in the subsequent history of the Asylum, one or two extracts from the records of the Institution explaining its nature, and the

views of the Directors in its ratification, may not be without interest. We quote from the Ninth Report:—

“At the conference which took place between the Commissioners and the Directors, a free exposition was made of the condition of the Asylum, its management, its funds, its resources, its expenditures and its prospects. The deliberations and proceedings were marked with the most entire reciprocal confidence, and the effects that are likely to follow, we cannot but consider as highly auspicious to the general interests of the deaf and dumb. We think we are perfectly safe in saying, that after a very full and minute investigation, the Commissioners were satisfied that the terms proposed by the Asylum, were such as would enable it *to do the most good in the most effectual way, to the Deaf and Dumb of our common country.*

“On this principle the Directors have ever acted, and will still continue to act, deeming it their sacred duty, as they are chiefly indebted for their funds to the munificence of the General Government, so to manage their resources and conduct the Institution under their care, that its benefits may be communicated in the most equal and impartial manner to every State in the Union that may wish to participate in them.”

In the proposition made by the Board to the Commissioners, these principles were made prominent. It was in the following terms:—

“Whereas, The States of Massachusetts, New Hampshire, Vermont and Maine have sent Commissioners to examine into the state and condition of this Institution, as it respects its funds, and the instruction, treatment and employment of the pupils, and to ascertain the terms and conditions upon which the deaf and dumb who may be sent to the Asylum from these States will be received; now, therefore, it is hereby

“Resolved, That we will receive the deaf and dumb who may be sent to the Asylum by the States aforesaid, respectively, or such of them as shall agree to our proposals, for the sum of one hundred and fifteen dollars per annum for each pupil, and for that sum to furnish such pupil with instruction, board, washing and lodging, and stationery for the school-rooms, and to teach them mechanical trades, as is hereinafter specified; and that the sum aforesaid shall be varied from year to year, as the state of the funds shall warrant, such sum to be fixed by the Directors at the commencement of each year, and to continue for one year, the year to commence on the last Wednesday of May, the money to be paid in advance. semi-annually. And further

“Resolved, That the Board of Directors will act in future, as they have done heretofore, upon the principle of making the charity with which they are intrusted as extensively useful as possible; and for that purpose, to

expend all that they have a right by law to expend, (the product of the fund,) and to distribute it with an impartial hand, extending its benefit equally, not only to the States aforesaid, but to all other States in the Union who may send their deaf and dumb to the Asylum upon the terms and conditions contained in this resolution; also to indigent individuals so that as our fund increases, (as we may reasonably expect will be the case,) the sum to be received as aforesaid, for instruction, &c., will be lessened from time to time, always calculating to expend, during the year, the income of the year, after reserving such sum as the Directors shall deem meet for contingent and unforeseen expenses."

As the result of this conference, the Commissioners voted unanimously to recommend to their respective legislatures to accept the proposal of the Board, and to send their deaf mutes to the Asylum for education. The recommendation was promptly adopted by each of these States, and the requisite appropriations made for carrying it into effect. Rhode Island came into the arrangement in 1842. A more honorable, benevolent, generous, judicious disposition of funds committed in trust to a Corporate Body, to use freely and at its own discretion, cannot be found in the record of human affairs. It was as pure an outworking of Christian charity, and as free from selfish and personal ends, as any human transaction can well be. The sole object of the Board in the arrangement was "to do the most good, in the most effectual way, to the deaf and dumb of our common country."

The arrangement thus consummated with the States of New England for the education of their deaf mutes, has been continued with mutual satisfaction to the present time. Pupils have annually entered the Institution from all these States, and at the close of their terms have returned to their friends, greatly relieved of their misfortune. On the part of the Directors, the contract which was thus entered into, has been most faithfully and liberally carried out. The fund has been skilfully and gratuitously managed, and not a dollar has been lost. The buildings and grounds have been enlarged as the wants of the school have required. A large corps of educated and able men have been employed as instructors, and the success of their efforts in the education given to the deaf and dumb has been surpassed by no Institution in this country or the world. Experienced Matrons and Stewards have had charge of the internal affairs of the household, special care being taken to throw around the children the life at the Institution, the kind supervision and pleasant associations of home. Shops have been erected, tools provided, and competent men employed to teach suitable trades, by which they might obtain a support after life. The graduates of the Institution, now numbering about fifteen hundred, scattered over all parts of New England and the coun-

are the best possible testimony to its high success, and to the thorough and practical character of the education which it has imparted.

The changes made, and the progress realized in the methods of instruction, have been most marked and important. In the earlier periods of instruction, much use was made of the system of methodical signs, so carefully elaborated by De l'Epée and Sicard, by which not only the different parts of speech, and their appropriate places in a sentence were designated, but each word, whatever its quality, modification or form, had expression in a definite and fixed sign. By this method, the exact words of any sentence could be given to a pupil in their proper order. These signs were greatly simplified and improved by Mr. Gallaudet and his early associates, who entered with enthusiasm upon their new labor, and were highly qualified for its prosecution. The system, however, was complicated and cumbersome. Words nearly synonymous, having only a shade of difference in meaning, must yet have each a distinct sign. To become familiar with these signs was found to involve great labor, and even after they were acquired, it was seen that informing a pupil the position of a word in a sentence, without giving a reason why it should be there, rather than in another place, was of little utility. Later instructors have improved upon these methods, by abandoning the use of methodical signs altogether, and they now remain, as far as American schools are concerned, an interesting monument to the ingenuity and perseverance of their authors. The old methods also introduced, at the commencement of the course, long vocabularies of names. The earliest books published contain interminable lists of words of every class and description, which the pupil was required to master, before proceeding to connected language. It is the habit of modern teachers, as soon as the pupil has the requisite materials to construct a sentence, to put him at once into the simplest forms of connected language, so that passing on from these to those more complicated, he proceeds intelligently till he overcomes every obstacle, and obtains a complete knowledge of this most difficult subject. The end of instruction, to restore the pupil to communication with society by making him acquainted with written language, is the same now as when the school was first opened. The main instrument for accomplishing this work, the natural language of the deaf mute himself, is used by our teachers now, as it was in the earlier stages of instruction; but the processes by which this end is attained are entirely different, so different that little similarity could be detected. We are free to say, that in no branch of education has so much advancement been made in methods and processes of teaching, within the last fifty years, as in the education of the deaf and dumb.

But the crowning honor of the Asylum and of its distinguished founder is, that here, first, was introduced by him, the exercises of religious worship, in the beautiful and expressive language of signs. Says Dr. Peet,

his appreciative tribute to the memory of Mr. Gallaudet, "first of teachers of the deaf and dumb, he established for his pupils the regular worship of God, including prayer, praise, instruction and exhortation in the only language which can be made intelligible to the mass of assembled deaf mutes; the only language, also, which, even with uneducated deaf mutes, goes directly to the understanding, the conscience and the heart." The daily and weekly exercises of religious worship were first commenced in the language of signs, as it has ever been maintained in American Institutions, is a source of unspeakable interest and profit to these "children of silence." Oral worship, they may have witnessed before coming to the Institution, but it was to them a ceremony mysterious and unmeaning. By means of signs, the simplest principles of divine truth can be made intelligible to them on first coming to school. The narratives and instructions of the Divine word can be clearly unfolded and they can be taught to worship God, in the only language which is acceptable to Him—the language of the heart. As a means both of moral and intellectual improvement, the service is of incalculable value. A source of unfailing satisfaction to the deaf and dumb, and no possible equivalent could be substituted for its loss.

The use which we make of the signs of the deaf and dumb, the class of those speech it is desirable to retain and improve, the general method and processes of instruction, and, in fine, the principles upon which we base our entire course of education, are those which have commended themselves to our matured experience, and which able and observant men of this profession have decided, upon the trial of a hundred years, to be the best. The excellence of the education obtained by the mass of pupils in our American Institutions, the degree of intelligence and culture acquired, their ability to read books intelligently and with interest, their free and natural use of language, and the practical character of the training to which they are subjected, as fitting them for the responsibilities

of life, are the highest possible testimony to the philosophical correctness and value of the processes by which such results are realized. We find nothing in the schools of other countries, or in other methods of instruction, that in these tangible and unquestionable tests of excellence, surpasses or equal our own. These results all intelligent persons can appreciate and their reality and worth they are competent to judge, and to them American instructors confidently appeal as proof that the methods they employ are, and must be, based upon reason and common sense.

We hear it said, however, in some quarters, that these principles are now being called in question; that the rival systems of instruction are being discussed again; that old methods are found to be imperfect, and are being set aside for others which are new and far preferable. No one could be distinctly understood, that there has arisen no new discussion

these methods whatever, *among practical teachers of the deaf and dumb.* Among the hundred and thirty gentlemen in this country who are engaged in this work, many of them men of high culture, and several of over forty years' experience, there is absolutely no difference of opinion respecting the comparative value of the two systems, nor in respect to the general principles upon which deaf mute education should be conducted. The entire agreement, on so important a subject as the best method of teaching deaf mutes, of so large a body of men, comprising certainly a fair amount of intellectual ability, men who have spent their lives in the investigation and testing of this very subject, cannot fail to have weight in the judgment of intelligent men. These gentlemen, without exception, fully endorse the conclusion reached by Prof. Day, after his second examination of foreign Institutions, with regard to the system pursued in American schools: "The principle on which it rests is right; the processes on which it depends are in accordance with sound philosophy, and the results, those which have given our Institutions a name and rank second to none."

It has sometimes been suggested that the education of deaf mutes should be commenced at an earlier age than we desire to receive them into our Institution. In most American schools the time for admission is between the ages of 12 and 20. One reason, in our case, in formerly fixing upon this limit, was the fact that the States of New England have been accustomed to provide for the support of their children only for the term of six years. Being confined to this very short time, we desire to take that period during which we can most benefit the pupil, and to secure this end, we need a maturity of mind and of physical health rarely attained before the age of ten or twelve. In deference to the pressing applications of friends, though somewhat in opposition to our own judgment, the Board, a few years since, consented to receive pupils as early as eight, and we continue to do so. Our experience, however, has not been favorable to this early commencement. We cannot approve of the policy of taking children in their early and tender years, and before they have passed through the diseases of childhood, from pleasant homes, and from the loving circle of relatives and friends, and sending them away to Institutions for instruction. If a deaf mute has a good home, it is a calamity second only to his deafness, to tear him away in his tender years from its endearing associations, and send him away among strangers to the drudgery of the school-room. No one more than the deaf mute, needs upon his character the softening, molding influences of home scenes and associations, the endearments of loving friends, the plays of childhood, and the gentle yet firm discipline of family order and quietness. More than this, his constitution, already seriously weakened by the very nature of his infirmity, demands the free range of out-door life and amusements,

with sports in the open air, to secure a vigorous and healthy development. The loss to the deaf mute, both mentally and physically, of such experiences in his early years, no subsequent care or attention can restore to him. Nor is his intellectual development endangered by this freedom of early life. It is mainly domestic, social and moral culture, and not intellectual, which the hearing child obtains during these years of immaturity. No judicious parent thinks of placing a child upon a course of study, or intellectual training, earlier than ten or twelve. Amusement and play is the order of the hour up to this time. If with these, some items of elementary knowledge are gathered, it is well enough, but thus early there should be little experience either to the hearing or to the deaf child, of the tedium and confinement of the school-room. If the deaf mute child has no home, or only a wretched one, and the State is willing to care for him for an indefinite period, as perhaps it ought, he might be placed in an Asylum where he could be nursed and watched over almost from his infancy, but such establishments would hardly be called, in any high sense, educational institutions practically. We do not usually find parents willing to be separated from children whom misfortune has rendered peculiarly dear, even as early as eight years of age. The trial is far less after they have reached the maturity of ten or twelve. These general views have induced us, in common with other American schools, to regard that as, upon the whole, the best age for commencing deaf mute education.

A careful examination of the annual reports of the Institution for the fifty years that are past, will clearly show the general principles upon which it has ever been, and still is, conducted. These reports have been written by different gentlemen, under the varying phases which their work presented as years have passed on. While the writers may have entertained peculiar views on minor points, as modified by individual observation and experience, and while, in the details of instruction, new methods, new text-books, and every expedient which a thoughtful ingenuity could suggest that promised to advance the great end sought—the mental and moral development and improvement of the deaf and dumb—have been freely adopted, yet the fundamental principles which have directed all these efforts have remained unchanged. These principles have been so often misapprehended or misstated, that it may be proper, briefly and distinctly, to indicate them.

1. Semi-mutes, comprising two classes—those who still retain some ability to distinguish articulate sounds,* and those who lost their hearing

* A deaf son of Mr. Jonathan Whipple, of Ledyard, Conn., who has attracted some attention from his ability to speak, is one of this class. The Rev. W. W. Turner, former Principal of the Asylum, who has been familiar with the case for many years, has kindly given his views respecting it. (See Appendix VI.)

after they had learned to speak—may be taught to communicate with others by speech. We have always maintained that children who lost their hearing at the age of five or six may retain their speech, with care and practice on the part of their friends. This should always be done, unless sufficient reasons make it undesirable.

2. There are cases of children congenitally deaf, who, from peculiar flexibility of the vocal organs, or special aptness, may be taught to articulate with considerable success. Such cases are rare, and seldom repay the great labor indispensable to secure any valuable result. Where the friends have wealth and leisure, such instruction may be added, rather, however, as an accomplishment, than as the most effective and satisfactory method for mental development and education.

3. The great mass of deaf mutes, comprising more than nine-tenths of the whole number, can be satisfactorily taught only by the use, in the first instance, of their own natural language of signs; while, by its use, their minds can be enlightened, they can be taught written language, and restored to intercourse with their friends and society. It is an invariable practice, as soon as a pupil becomes acquainted with the forms of language, to require him to use it. While signs need be no detriment in learning language, but an important aid thereto, for stimulating the mind, and for the rapid communication of ideas, they are of immense advantage, and, for social religious worship, indispensable. Graceful, expressive and beautiful, and aptly styled the "poetry of motion," capable of representing all shades of emotion and thought, recognized and used in their suggestive forms by the most savage and by the most cultivated men, their value to the deaf mute cannot be estimated, nor their use prevented, either by brilliant theories or the most stringent interdiction.

4. The gathering of deaf mute children into schools of suitable size, under proper supervision, while desirable in point of economy, is of great benefit to them in conducting their education. It stimulates their minds, improves their manners, cultivates their social feelings, gives them habits of order, obedience, and deference to the comfort of others, and serves to prepare them for the duties of active life. No private care or culture can supply the advantages which deaf mutes gain by such association and discipline.

Classification of Pupils in respect to Residence.

Maine,	248	Georgia,	
New Hampshire,	170	Alabama,	
Vermont,	195	Louisiana,	
Massachusetts,	597	Texas,	
Rhode Island,	52	Indiana,	
Connecticut,	275	Illinois,	
New York,	32	Michigan,	
New Jersey,	7	Wisconsin,	
Pennsylvania,	12	Ohio,	
Maryland,	4	British Provinces,	
District of Columbia,	2	West India,	
Virginia,	11	California,	
North Carolina,	4	West Virginia,	
South Carolina,	19		1,7

Classification in respect to means of Support.

Maine,	239	Georgia,	
New Hampshire,	162	U. S. Government,	
Vermont,	187	New York,	
Massachusetts,	557	New Jersey,	
Rhode Island,	48	Illinois,	
Connecticut,	235	British Provinces,	
South Carolina,	17	Friends,	

[B.]

CLARKE INSTITUTION FOR DEAF MUTES

AT NORTHAMPTON.

FIRST REPORT,

For the year ending December 31, 1867.

MEMBERS OF THE CORPORATION.

- GARDINER G. HUBBARD, Boston, *President*.
WILLIAM CLAFLIN, Newton, *Vice-President*.
LEWIS J. DUDLEY, Northampton, *Chairman School Committee*.
OSMYN BAKER, Northampton, *Clerk and Treasurer*.
THOMAS TALBOT, Billerica.
WILLIAM ALLEN, JR., Northampton,
JULIUS H. SEELYE, Amherst.
GEORGE WALKER, Springfield.
HORATIO G. KNIGHT, Easthampton.
JAMES B. CONGDON, New Bedford.
JONATHAN H. BUTLER, Northampton.
JOSEPH H. CONVERSE, Boston.

TEACHERS.

- Miss HARRIET B. ROGERS.
Miss MARY S. BYAM.

Miss JULIA SPAULDING, *Assistant-Matron*.

REPORT OF THE PRESIDENT.

ION. J. WHITE, *Secretary of the Board of Education.*

DEAR SIR:—In accordance with your suggestions that the first report of the Clarke Institution for Deaf Mutes, in addition to a statement of the way in which the money received from the State has been expended, should contain an account of the origin and history of the school, its purposes and aims, and of everything which would be desirable as a matter of future reference, we submit the following Report:—

The ablest friends the deaf mutes have had in this State were the Hon. Horace Mann and Dr. S. G. Howe, co-workers in many benevolent efforts. The attention of Dr. Howe was especially directed to the subject of deaf mute education through his interest in two deaf, dumb and blind pupils,—Laura Bridgman and Oliver Caswell,—who were taught with great success, from 1837 to 1845, by the finger alphabet; while Julia Brace, also deaf, dumb and blind, was taught for many years at Hartford by signs, with little success. Two deaf mutes were also taught by Dr. Howe by the same method. One of the teachers employed in this work was Miss Rogers, of North Billerica. In 1843, Horace Mann, then Secretary of the Board of Education, in company with Dr. Howe, travelled through Europe, and visited some of the European institutions for deaf mutes. In his seventh report he gave a short account of the system of education adopted in the German schools, and strongly advocated that system as superior to the one in use in our own country.

This report excited so much interest that the American Asylum at Hartford, and the New York Institution for Deaf Mutes, sent gentlemen abroad carefully to examine and study these systems. They returned, and reported that the system adopted in this country produced better results than those attained abroad, and therefore advised that no material change be made.

Mr. Weld, of the American Asylum, recommended that greater attention be paid to teaching articulation to semi-mute and semi-deaf pupils. In accordance with his suggestions, articulation was taught at the Asylum by a teacher employed for that purpose. These efforts were gradually abandoned.

But the labors of Dr. Howe and Mr. Mann were not fruitless. From time to time, the attention of the public was called to the subject; and a few parents, whose children had lost their hearing, were encouraged by Dr. Howe to persevering efforts to retain the articulation of their children, and teach them to read from the lips. The President of the Clarke Institution was among this number. He desired that others should share in the benefits his daughter had received; and applied to the legislature of this State, in 1864, for a charter for a deaf mute school. In this application he was greatly aided by Dr. Howe; but the effort failed. At this juncture, Providence opened a new way to attain the desired object. In the fall of the same year, Miss Harriet B. Rogers,—a sister of the teacher of Laura Bridgman and Oliver Caswell,—ignorant of the interest taken in teaching deaf mutes articulation, and of the efforts made in that direction in Massachusetts, had placed under her charge a deaf mute, whom she taught by articulation, only knowing that this system had been successfully taught abroad. Finding success attend her labor, and aided and encouraged by a few friends, she determined to open a school, and issued the following advertisement, Nov. 7, 1865: "Miss Rogers proposes to take a few deaf mutes as pupils for instruction in articulation and reading from the lips, without the use of signs or the finger alphabet. The number is limited to seven, two of whom are already engaged." One year elapsed before she obtained the desired number of pupils. In June, 1866, she opened her school at Chelmsford with five scholars. Another entered in September, and two more in the spring of 1867.

In 1866 and 1867, the attention of the legislature was again called to the subject by the second and third reports of the Board of State Charities. Dr. Howe was Chairman, and F. B. Sanborn, Esq., Secretary, of the Board.

While these movements were taking place in the eastern section of the State, the large heart of one of the citizens of Northampton, John Clarke, Esq., was turned to this unfortunate class; and he communicated to his friends his desire to contribute towards the endowment of a school in this State for deaf mutes, if such an institution was required. His friends conferred with Governor Bullock, who cordially entered into Mr. Clarke's views, and laid the matter before the legislature in an eloquent passage in his message of January, 1867.

That part of the message was referred to a joint special committee, who gave full consideration to the subject. The expediency of founding an institution in Massachusetts, the merits of the different methods of instruction, and the time for commencing and finishing their school instruction, were discussed at length. Dr. Howe and Mr. Sanborn appeared for the Board of State Charities; Mr. Hubbard, for parties desiring an act of incorporation; Mr. Smith, of Boston, and other deaf mutes, as advocates

for a school in Massachusetts, and for improved methods of instruction; Messrs. Stevens of Boston, and Turner and Stone of Hartford, for the American Asylum, and as advocates for instruction by signs.

The committee visited the American Asylum and the school of Miss Rogers, and made a report recommending the passage of two bills, which were passed and approved on the first day of June, 1867.

The first bill provided for the incorporation of the Clarke Institution for Deaf-Mutes at Northampton, with authority to establish classes for instruction in two other suitable localities.

The other provided,—

1st. For the education of certain deaf children between five and ten years of age, by the Clarke Institution at the expense of the Commonwealth.

2d. For extending the time devoted to the instruction of deaf children from six to ten years.

3d. For the supervision, by the Board of Education, of the instruction of all deaf mute pupils aided by the Commonwealth.

4th. For an additional appropriation to carry out these objects.

Mr. Clarke, whose modesty is as great as his generosity, was unwilling to have the institution called by his name, and it was only after repeated solicitations that he consented, in deference to the wishes of his friends.

The corporation was organized on the 15th day of July, 1867, and a code of by-laws adopted. It was decided that an articulating school should be established at Northampton, under the charge of Miss Harriet B. Rogers. A committee waited upon Mr. Clarke with a copy of the Act of incorporation and of the by-laws. They returned in a few moments, and reported that Mr. Clarke was ready that very morning to transfer to the institution forty thousand dollars in government securities at the market price in New York, and an additional amount sufficient to make the sum of \$50,000 when required by the wants of the corporation. The balance has since been paid. This is believed to be the largest donation ever made in this country by an individual to an institution for the benefit of deaf mutes.

The price for board and tuition was fixed at \$400, for tuition at \$100 per annum. These prices are less than the charges at many private boarding schools. The entire income from the fund is used to aid those unable to pay the full amount.

The question of a location for the school arose at the organization of the institution, and a temporary arrangement was made by which the teachers and pupils are boarded in a very convenient house on Gothic Street, Northampton, within a short distance of the churches, post-office, railroad stations, and hotels; and two large rooms were rented for school and recitation rooms, within five or six rods of the boarding-house. Large play-

grounds belong to the house, which was formerly occupied by the Collegiate Institute. The children are thus continually under the eye of their instructors, take their meals at the same table with them, and constitute a large family and home school suitable for deaf mutes so young.

At the October meeting of the corporation a committee was chosen to consider the expediency of purchasing a permanent location for the institution. They conferred with Mr. Clarke, and, after a full consideration of the whole subject, it was unanimously decided that with the present fund much more could be accomplished by expending the income in the present manner, than by investing a large portion of the fund in land, bricks and mortar.

The school at Northampton was placed under the general charge of a committee, a majority of whom reside in Northampton or one of the adjoining towns.

The school has at present but two teachers, Miss Rogers, and Miss Byam, her very able assistant, who was associated with her at Chelmsford. This is not a sufficient number of teachers in the present condition of the school, "as anything like systematic classification of pupils so recently brought together, so limited in number, and yet so diverse in age, capacity, wants and attainments is impossible. The number of distinct school exercises each day is twenty-five, some of which are with individual pupils, and some with a large portion of the school."*

Teachers should also be training for the work to supply any vacancy that may occur, and that the institution may be prepared to instruct the increased number of pupils which it expects to admit another year.

The school was opened on the first day of October, 1867, and now has twenty scholars. *Eight* are supported by friends; *one* by friends and the State; *three* by friends, the State and the institution; *six* by the State and the institution; *one* by friends, the State of New Hampshire and the institution,† and *one* by the institution. *Ten* in all receive aid from the Commonwealth. *Eleven* are either congenitally deaf or lost their hearing at two years of age or under, before they had acquired any language. A catalogue of the pupils is annexed hereto, and a statement giving some account of their progress.

The short time the institution has been in operation prevents us from giving a statement of the annual expenses, but a statement of the fund, and of the receipts and expenditures to the present date, is annexed hereto.

* Extract from the report of the committee on the school.

† The corporation will apply the income from the Clarke Fund solely to the education of deaf-mutes from Massachusetts. But arrangements having been made by Miss Rogers, while at Chelmsford, for the instruction of this pupil, the corporation carry out the agreement.

The cost will be from \$350 to \$400 for each pupil, which is not a sum considering the small number of pupils.

The committee of the legislature, in their report before referred to, state that the income of the asylum at Hartford "has enabled the directors to reduce the price of tuition and board to about one-half the actual cost, making the whole cost at Hartford \$350. This sum is also the cost of the Blind Asylum.

It will be noticed that one pupil is supported wholly by the institution. She lost her hearing at three years of age, but retained her articulation, and therefore belongs to that class for whom the institution is peculiarly adapted. She was over ten years of age, and could not receive the State aid. Her application was made and accepted while the number of pupils was uncertain. Several others in the same condition subsequently applied for admission, but could not be received, as each one thus admitted necessitated the rejection of two under ten years of age.

Several of the present scholars will before another year have reached the age fixed for State aid, and the legislature must decide whether the education of deaf mutes begun in this institution shall be carried on by articulation, or at Hartford by signs.

A larger appropriation for the education of deaf mutes seems necessary. Their number in this State has been variously estimated. By the United States census, in 1860, the number was given as 427; but the editor of the Census Report declared this number too small, and estimated it at about 820 in 1860, or 850 in 1867. By the State census in 1870, it is given as 561. Mr. Sanborn is engaged in making a census of the deaf mutes, and already has on his list 810 names, with the residence of each. There is little doubt that when the whole State is thoroughly canvassed, the number will reach 950. The average of these three estimates is 779. One-fourth of this number, or 197, are between five and fifteen years of age; * 108 are at Hartford and 18 at Northampton, leaving 76 for whom provision is made. This large excess is caused in part by the extension of the term of instruction without corresponding increase of the appropriation. The term was extended from six to ten years, or more than double, while the appropriation for their education was only raised from \$18,100 to \$21,500, or less than one-fifth. Thus, by one section of the Act, the State authorizes the Governor to send to school all such persons as he deems fit subjects for instruction, at the expense of the Commonwealth.

* Mr. Sanborn, in the report of the Board of State Charities, says that out of 762 deaf mutes whose ages are given, 98 are of the age of 10 and under, 108 are from 10 to 15, and 15 to 20,—in all 298 under 21, and 208 under 18. Making the needful additions to the number of those under 10, it is probable that the number of children of the school age would be found not less than 950, of whom only about three-fifths are or have been under special instruction.

and by another it restrains him from so doing, by withholding the required appropriation.

METHOD OF INSTRUCTION.

The general education of deaf mutes was not commenced until near the end of the last century, when at the same time two methods of instruction were devised; one by Heinicke, of Saxony, who taught by articulation; the other by the Abbe DeL'Epée, who substituted methodical and artificial signs for words. The principles on which these systems were founded differed as widely as the methods of instruction. The former was adopted in most of the countries on the continent, and to a limited extent in England; the latter in France, whence it was brought to this country by Dr. Gallaudet.

These different systems are still employed in the same countries, though with so many and important modifications in each, that the originator would scarcely recognize his own work.

Signs were at first unknown in the articulating schools, and the instruction to a great extent was mechanical, the pupils repeating the words they were taught, very much as a parrot does. Years were expended in this profitless task, before giving the pupils language, or instruction in general knowledge. Gradually, in these schools, the natural signs and the finger alphabet have been introduced to explain the meaning of words, and facilitate the acquisition of language.

The English schools where articulation is made the basis of instruction, have made little progress during the last fifty years, and afford no opportunity for testing the system. In Prussia and Germany, great attention has been given to the subject, and very many works have been published, but they have not been translated. Our chief knowledge of these schools from persons acquainted with the education of deaf mutes, is through teachers connected with institutions using the other system, and their reports are not regarded by the German professors as giving a fair account of their method and its results.

In the French system, signs were originally used merely as substitutes for words, every part of speech and every word being translated by its fixed sign in the natural order or idiom of the spoken language. As hearing children learn the word by the sound, so the deaf mute learned it by the eye, the sign being the substitute for the voice. But the same objection was made to this system as to the other, that the pupils made the signs and wrote the words without having ideas of their meaning. To meet this objection, the system has been changed by substituting natural or descriptive signs as they are called, in a natural order or idiom. So great is the change, that the pupils of the French and American

schools of the present day would be unable to comprehend the method of signs of De L'Epée and Sicard.

This sign language has few parts of speech, a limited vocabulary, an inverted idiom unnatural to one accustomed to the idiom of the English language. This language becomes the vernacular of the pupils; in writing they frequently use their own peculiar idioms, called by teachers "deaf-mutisms."

As in the German schools, signs have been introduced, so, on the other hand, articulation has been adopted as a method of instruction in the French school, and now in the school founded by De L'Epée and Sicard and in which Dr. Gallaudet was instructed, "Dactylogy is made to form an important part in the process of instruction, and at the same time opportunities for acquiring facility in artificial speech and lip reading are afforded to every pupil in the institution, effort in this direction being suspended when plain evidence appears of inability on the part of the pupil to succeed."*

The end and object of each system was the same,—to teach language and enable the deaf mute to communicate with the world in which he lives. All agree that the means proposed by the German system are preferred, provided the desired results can be attained. The advocates of the French language assert that this system has succeeded only in exceptional cases.

But while these changes have been made in the European schools, articulation being employed as a method of instruction in almost all institutions, signs have been the sole method of instruction in the institutions of this country.

E. M. Gallaudet, Esq., the president of the National Deaf-Mute College at Washington, visited Europe last spring, and returned in the autumn. The tenth report of that institution has appeared since this report was begun. It contains an account of his examination of the European schools, and of the methods of instruction pursued in them. It is well written, and seems to be a very fair and candid report. It closes by suggesting the introduction of several new features into the management of our American institutions.

"1st. That instruction in artificial speech and lip reading be commenced upon at as early a day as possible; that all pupils in our primary institutions be afforded opportunities of engaging in this until it plainly appears that success is unlikely to crown their efforts; that with those who show facility in oral exercises, instruction shall be continued during their residence in the institution.

"2d. That in order to afford time for this new branch, without depriving our pupils, in any degree, of that amount of training necessary prop-

* See Tenth Report of the Columbia Institution.

educate their intellectual and moral faculties, the term of study in the primary department be extended to nine years, and the age of admission fixed at eight years, instead of ten, as heretofore.

"3d. That such additions be made to our staff of teachers as may be needed to secure thorough and effective instruction in this new line of effort."

The Clarke Institution differs from all other American institutions in this, that it receives pupils at as early an age as they are admitted in our common schools, and in teaching by articulation and lip reading only.

At this school, before the articulating muscles have become rigid from want of use, and while the powers of imitation are the quickest, and the imaginative faculties the most active, the little deaf mutes are taught the powers of the letters, the articulation and meaning of words and short sentences, and simultaneously, by watching the motion of the lips in forming the sounds, to read from the lips. Natural signs, pictures and objects are used to explain the meaning of new words.

In order that the position of this institution may be distinctly understood, we state, in conclusion, the following as the basis on which it is conducted.

There are various classes of deaf mutes who cannot be taught by articulation. These are—

1. Those whose mental powers are feeble by nature or disease, and who are idiots rather than mutes.

2. Those whose organs of speech are imperfect, some of whom are not deaf.

3. Those who have sufficient mental ability, but who can no more be taught articulation than many hearing persons can be taught singing. In the first and third classes, the organs of speech are perfect, but the pupils do not possess the power or ability to use them correctly. How large a proportion of deaf mutes in our country belong to these classes is not known.

There are various classes of deaf mutes who can be taught articulation. These are—

- A. Those who lost their hearing at three years of age and upwards, after they had acquired some language, which they retain.

- B. Those congenitally deaf, who have good mental ability, and a capacity for learning to speak.

- C. Those who are semi-deaf, and can distinguish articulate sounds, but not readily enough to attend the common schools with profit.

The proportion of deaf mutes in classes A and C is variously estimated at from one-twentieth to one-half. Perhaps one-half of the deaf mutes can be taught by articulation,—say three hundred, in New England,—sufficient to form a large school.

This school was established particularly for the education of deaf mutes of the classes A and C, but others of the class B have been admitted, and thus far have made satisfactory progress. Articulation is used as a means of instruction, because we believe it the best method for our purpose. The institution is not, however, pledged to any unchangeable system, only to that, whatever it may be, which experience shall prove to give the best results.

GARDINER G. HUBBARD, *President*

NORTHAMPTON, January 21, 1868.

STATEMENT OF THE CLARKE FUND.

1867.	July.	Received from John Clarke, Esq.,	.	.	\$40,000
	Oct. 12.	" " " "	.	.	1,000
1868.	Jan'y 8.	" " " "	.	.	9,000
					<hr/> \$50,000
1867.	July.	Purchased \$36,600 5-20 U. S. bonds,	\$39,511	25	
1868.	Jan'y 8.	" \$8,500 " " "	8,928	25	
Cash on hand—balance of this acc't,					1,560 50
					<hr/> \$50,000

Receipts and Expenditures.

Received from pupils,	.	.	.	.	\$1,649
from the Commonwealth of Massachusetts,	.	.	.	.	787
from proceeds of coupons,	.	.	.	.	1,452
					<hr/> \$3,889
Paid for furniture, books, &c., for school,	.	.	.	.	\$411 94
for fuel, \$57.10; rent, \$908.25; sundries, \$71.45,					436 80
for salaries, \$525.67; board, \$1,943.07,	.	.	.	.	2,468 74
Cash on hand—balance of this account,	.	.	.	.	572 02
					<hr/> \$3,889

Names, Residence, &c., of Pupils in the Clarke Institution for Deaf-Mutes, December 31st, 1867.

NAMES.	Residence.	Parents Living.	Time of Entering Institution.	Age at Time of Admission.	Cause of Deafness.
Bancroft, Elizabeth A.,	Peterham, Mass.,	Father,	1867.	15 years 9 months,	Scarlet fever at 3 years.
Bosworth, Mary,	Eastford, Conn.,	Father, mother,	October,	6 " 7 "	" " "
Brown, Frank,	East Longmeadow, Mass.,	"	"	9 " - "	Unknown—before 2 years partially deaf.
Brown, Mary Lizzie,	Kensington, N. H.,	"	"	9 " 5 "	Congenital.
Cushing, Fannie M.,	Boston, Mass.,	"	"	11 " - "	Unknown; at 3½ years.
Dudley, E. Theresa B.,	Northampton, Mass.,	"	"	13 " 6 "	Congenital.
Ellsworth, Allie,	Willbraham, "	Mother,	"	7 " 3 "	Unknown; at 2 years.
French, John Y.,	Charlestown, "	Father, mother,	"	5 " - "	Partially deaf from birth.
Greene, Roscoe,	Providence, R. I.,	Father,	"	18 " 11 "	Inflammation of brain; 7 years 8 months.
Howes, Bertha,	East Dennis, Mass.,	Father, mother,	"	5 " 6 "	Congenital.
Jordan, Harry,	Waltham, "	Mother,	"	9 " - "	"
Keith, Arthur,	Palmer, "	"	"	7 " 9 "	Gatherings in head; 2 years.
Keogh, Michael J.,	Stow, "	Father,	November,	9 " 5 "	Scarlet fever; 5 years 4 months.
Langdon, Willie, S.,	South Wilbraham, Mass.,	Father, mother,	October,	8 " 11 "	" " 5 " 6 "
Plummer, Jerome H.,	Brooklyn, N. Y.,	"	"	13 " 9 "	" " 7 " 9 "
Porter, Isabel E.,	Wrentham, Mass.,	"	"	8 " 9 "	" " 3 " 9 "
Sawyer, George C.,	Charleston, S. C.,	"	"	7 " 1 "	Meadles at 1 year.
Towle, Lewella,	East Boston, Mass.,	"	"	7 " 8 "	Humor at 1 year 4 months.
Ward, Harry K.,	West Haven, Conn.,	Mother,	"	7 " - "	Congenital.
Whittier, Mary Emma,	Bangor, Maine,	Father, mother,	"	9 " 9 "	"

EXTRACTS FROM THE TEACHER'S REPORT

GENERAL CLASS.

Between the first of October and the last of November, 1867, children between the ages of five and nine years entered the school. divisions were made of this class, on account of difference in age and capacity.

(*First Division.*)—John Y. French (5 years of age,) semi-deaf. He has a loud sound behind his ear, but imitates sounds better from watching the lips than from hearing. Spoke a few words when he entered the school. After thirteen weeks' instruction, he articulates, reads from the lips and prints *twenty-eight* words, and begins to read sentences formed from these. He is the only child in this division who hears anything; for this reason he articulates better than the others, but otherwise his progress is a fair sample of theirs.

Bertha Howes, (5 years of age,) and Harry K. Ward, (7 years of age,) are both congenital mutes. Bertha can give the pure sound of *b*, *d*, and *g*, which Johnny French, with his hearing, cannot give.

Allie Ellsworth (7 years old,) lost his hearing when two years of age. He never talked. His voice at first was very high, but has changed very much.

Mary Bosworth (6 years old,) heard and talked until three years of age. Entered school October 3d, 1867, without any idea or power of articulation. For many days she could not make even the breathing sound "h," except when her hand was before her mouth, so that she could feel the breath escape. For a longer time she could make articulate sounds only by putting one hand on the throat of her teacher and the other on her own, and then with great difficulty. She read from the lips as well as the others of her class. At the end of six weeks, having received extra care and attention, she could articulate twelve letters, oftentimes without putting her hand on the throat; and read from the lips and print twelve four letters. During the seventh week her progress was more encouraged for at the end of that time she could articulate nineteen letters, and read from the lips and print four words. She spoke her first word, "mother," November 24th. Now (December 30th,) she articulates a few words, though she reads from the lips, and prints as many as the others of her class. None of these five children knew any letter when they came

(*Second Division.*)—Ella Towle (7 years old,) lost her hearing when sixteen months old. She knew no letters, and had not received any instruction. At the end of six weeks she could read from the lips and print all the letters, and twenty words. She articulates twenty-one letters, but does not yet give the pure sound of *b* and *d*, although she can give these sounds in words. She now reads from the lips, articulates, prints, spells aloud, and understands the meaning of fifty words. Reads and illustrates the meaning of ninety sentences formed from these words, as "Put the hat and boots on the floor;" "Go and wash the slate;" "You may stand on Emma's slate;" "You may eat butter on your bread;" "Open your mouth;" "Shut the door;" &c., &c. This is a fair specimen of the progress of the division up to this time (December 31st.)

Mary Emma Whittier, (9 years old,) a congenital mute, entered October 18th, 1867. In four weeks she learned to articulate twenty-two letters, and to read from the lips and print twenty-four letters and twenty words. She catches words very quickly from the lips, and has learned the name of every child from seeing us pronounce it. She says these names very imperfectly, but reads them from our lips very readily. She gives the pure sounds of *b*, *d*, *g* and *k*, which are among the hardest in our language.

George Sawyer (7 years old,) lost his hearing when one year old. He had received no instruction. He has learned to articulate all the letters, giving the pure sounds.

Michael J. Keogh (7 years old,) entered November 29th, 1867. Lost his hearing at five years. He retains considerable language, but speaks so rapidly and indistinctly that often we cannot understand him. Probably he retains considerable knowledge of language. He had no idea of reading from the lips, but wrote and spelt a few words.

Frank Bowers, (9 years old,) partially deaf from infancy. He spoke a good many words very indistinctly. He knew a few words by sight, but could neither print nor write. He could not give the sound of the letters, although he knew the names of most. He did not acquire the sounds of *b*, *d*, *g* and *k*, so quickly by several weeks as some of his class deaf from birth. He writes a good hand; reads from the lips; writes, spells and understands 150 words, and reads a great many sentences formed from them.

FIRST SPECIAL CLASS.

Etta Theresa B. Dudley, (13 years old,) congenital mute. Had been taught only by the manual alphabet and signs. Entered school October 3d, 1867, to learn to read from the lips, and, if possible, to talk. She spoke four or five words, and articulated a few of the letters, which she learned last summer while spending a few days at Chelmsford. In six weeks she learned to articulate all the letters of the alphabet and many

combinations of consonants, among them the "ng," one of the most cult. She has learned a great many words, which she delights in speaking. November 16th she came to my room and said, "Mamma wants you to her." I said "Where is mamma?" She answered, "In the kitchen." These words were all spoken. Sometimes, in talking, if she cannot articulate a word, she will spell it with her lips in preference to using her fingers. She has a spelling lesson daily, which she reads from the lips and spells by sound; reads simple sentences from the lips and writes them on her slate.

December 31st. She uses her fingers very little, expressing almost all her wants by spoken words. She frequently says, "I like to talk better than to make signs." She has improved very much in reading from the lips within the last month. She reads with Fannie and Willie every day, and spells with two classes.

Fannie M. Cushing (11 years old,) lost her hearing when 3½ years previous to which time she was precocious in the use of language, but knew everything but the word "boy." Her instruction commenced November 1864. She knew neither words nor figures. On opening the Chelmsford school, June 1st, 1867, she was put back into the class with beginners. She was so much more interested in learning in a class, than when alone, that it was thought the loss sustained by the change would be more than compensated for in the future, particularly as one in the class, Willie Langdon, retained his speech, and his use of language would stimulate if classified with him. As they are in the same class the report of the progress of one will answer for the other.

Willie S. Langdon (9 years old,) lost his hearing at 5½ years. Entered the Chelmsford school June, 1866, knowing the names of most of the letters, but the power of none. This was a great disadvantage, as the names of many cases, are entirely useless, and it was difficult to acquire the power of the letters. He retained the power of speech, but was fast forgetting the proper use of language, and spoke indistinctly. His mother said before he came to school he received a present, and, wishing to say "Thank you," but having forgotten that expression he said, "Good-bye. He will do you do." After nine and a half months' instruction he could tell a story connectedly; for instance, in telling what the word "field" meant, he said, "Last summer, when it was warm, I, and my father, and John, was in the fields, and John killed a small yellow snake, it was swimming in the water." After 53 weeks instruction, he is familiar with the meaning of and spells 1,000 words, besides many others learned from the lips of those talking with him. In arithmetic, he added rapidly a succession of numbers, $47+10+8+6+17+9+6+7=75+9=94+18$, and comprehended the language of simple questions in addition. During the term he read through and reviewed Mrs. Barbauld's "Lessons for Little Th

and had daily exercises in construction of sentences ; also in reading from the lips, and writing a short, simple story. He writes a letter every week, a specimen of which is here inserted, entirely his own composition, without any suggestion or correction :—

CHELMSFORD. July 28th 1867

My dear sister Louisa,

Yesterday I coughed in the water and Arthur sat on my back and he was putting my head in the water and he was very naughty—Miss Rogers said it is fifteen nights before we all shall go home and then in September we all shall go to Northampton near Wilbraham to stay very many nights and Northampton is not a city—Harry has gone down stairs and Arthur wanted to go with him and Miss Rogers told Arthur you must not go with him—Your letter came in Sunday and mother's letter came in Sunday and Roscoe brought those letters to me. Arthur is sitting on the bench. Walter and Fannie are talking together about Northampton and they say we all shall not come to Chelmsford. Louisa is that a nice letter. Walter is begging for Fannie's rubber and now he got her rubber and I do write faster than Walter is slowly. Yesterday Roscoe and Harry and Arthur and Walter and I went after blackberries and we rode very far off in the waggon and Walter and I fell out of the waggon behind it out on the stone and the horse ran very fast—Walter is saying to Fannie all the children go to Northampton to stay very many nights. Arthur is sitting on the homely book. I think very fast. Miss Rogers came to Fannie and she said Fannie you must write and you must not talk to Walter and she does not write to her mother. By and by it will be August.

Good by

From

Your brother

WILLIE

This is his own use of capitals and spelling.

December 31st, 1867. He now studies geography, subtraction, and has read nearly through Hillard's Primary Reader ; and it is impossible to keep a record of the words he uses, as he is constantly learning new ones from reading and conversation.

SECOND SPECIAL CLASS.

One class consists of four pupils :—

Harry Jordan, (9 years old,) congenital mute. Entered at Chelmsford June 7th, 1866.

Arthur Keith (3 years old,) lost hearing at (two years of age. Entered Chelmsford school September, 1866.

Isabel E. Porter (8 years old,) lost hearing at three years of age. Entered Chelmsford school April 19th, 1867.

Mary Lizzie Brown, (9 years old,) congenital mute. Entered Chelmsford school April 19th, 1867.

Harry and Arthur have been delayed in their progress, and Lizzie and I have been pushed, in order to combine all in one class. When they entered school at Chelmsford, they had received no instruction. Bell remembered several words and two or three phrases, but spoke in a nasal tone, and was only understood by her family.

October 1st, 1867. On entering the Clarke Institution, they all read from the lips, wrote, spelled aloud, and explained the meaning of 480 words. Harry and Arthur added mentally such numbers as the following: " $47 + 19 + 18 + 7 + 6 + 5 + 9$ " — " $43 + 19$ " — " $73 + 17$."

December 31st, 1867. The class now spells and explains the meaning of more than 700 words.

SINGLE PUPILS.

1. Jerome H. Plummer (14 years old,) entered school October, 1867, to learn to read the lips. He became deaf at eight; could read but little from the lips; his mother communicated with him chiefly by the finger alphabet. At present (December 31st,) we communicate with him entirely by the lips. He is studying written arithmetic and French, reads and spells daily, and makes a regular exercise in lip reading.

2. Roscoe Greene (18 years old,) entered the Chelmsford school in June, 1866, to learn to read from the lips. He became deaf at seven; retained some articulation, but could read less than a dozen words from the lips. He is now studying Greenleaf's Common School Arithmetic, (at Equation of Payments,) Tower's Grammar of Composition, reads and spells daily, and reads from the lips every day a lesson in physical geography, which he afterwards writes out from memory. He makes no notes, and does not refer to the book previous to writing this exercise. Communication is maintained with him entirely by speaking, even by the servants in the house.

HARRIET B. ROGERS.

TERMS OF ADMISSION.

This Institution is especially adapted for the education of semi-deaf and semi-mute pupils, but others may be admitted.

It provides for the pupil's tuition, board, lodging, washing, fuel and lights, superintendence of health, conduct, manners and morals.

The charges are four hundred dollars a year ; for tuition alone, one hundred dollars ; payable semi-annually in advance, the first week of each term. No deduction, except for absences on account of sickness. Extra charges will be made for actual expenses incurred during sickness.

The State of Massachusetts appropriates annually funds for the education of its deaf mutes. The Institution, also, appropriates the income from its funds for the aid of beneficiaries from Massachusetts, according to their need. Forms of application for the State aid will be furnished by the Secretary of the Commonwealth or by the Institution.

There are two terms in the year, of twenty weeks each ; the first commencing on the third Wednesday of September with a vacation of four weeks in winter ; the second commencing on the first Wednesday of March, with a summer vacation of eight weeks. Pupils cannot spend the vacation at school.

It is desirable to have all applications for admission for the succeeding year made as early as June. The year begins on the third Wednesday of September. None will be admitted at any other time, unless they are fully qualified to enter classes already formed, and on payment of the full tuition for the term in which they enter.

The pupils must bring good and sufficient clothing for both summer and winter, and be furnished with a list of the various articles, each one of which should be marked, and also with paper, envelopes and stamps. A small sum of money, not less than five dollars, should be deposited with the principal for incidental expenses.

Applications and letters for information must be addressed to the "Principal of the Clarke School for Deaf-Mutes, Northampton, Massachusetts," with a stamp for return postage.

Pupils must be at least five years old on entering the Institution.

The Institution is not an asylum, but a school of learning ; and none can be admitted or retained who have not the ordinary growth and vigor of mind and body, and moral habits.

Visitors from Northampton are admitted Thursday afternoons. Strangers at all times, excepting Wednesday and Saturday afternoons and Sundays.

ABSTRACT

OF

SCHOOL COMMITTEES' REPORTS.

ABSTRACTS.

S U F F O L K C O U N T Y .

BOSTON.

With a population, according to the last census, of nearly two hundred thousand, there are now in this city, connected with our system of Public School instruction, and under the immediate supervision of this board, twenty-seven thousand seven hundred and twenty-three pupils. These may be classified as follows :

The whole number of Primary Schools,	256 schools.
The whole number of Grammar Schools,	21
The whole number of High Schools,	3

Making in all, 280 schools.

Teachers in the Primary Schools,	257
Teachers in the Grammar Schools,	323
Teachers in the High Schools,	33

The whole number of teachers, 613

Male teachers, 66. Female teachers, 547.

Pupils in the Primary Schools,	12,553
Pupils in the Grammar Schools,	14,394
Pupils in the High Schools,	776

In all, 27,723 pupils.

Your committee are convinced, both from a careful examination of the records, and from personal investigation, that the schools were never in a more favorable condition than at the present time. Through the various departments there is unusual harmony of action. Special measures have been adopted to overcome admitted defects, and to introduce important

improvements, which have thus far led to marked and beneficial results. The discipline through the schools is firm, mild and parental. The progress of the scholars has been encouraging, and to a great degree satisfactory. Character has been considered as well as intellect, while the aim throughout has become more and more a desire to call into healthy activity the whole nature, physical, mental and moral, rendering the entire process of instruction a fitting preparation for those actual duties and responsibilities of life, upon which the pupils must eventually enter.

As an evidence of the general appreciation of the Public Schools, it is interesting to know that the proportion of the children of our citizens now educated in them is as twenty to one over those educated at private expense. It has been the constant determination to render these schools so thoroughly good that they shall be attractive to all. Why should it not become a matter of honest ambition among families of the amplest means and truest judgment to have their sons and daughters here educated; the children of the mechanic and the merchant sitting side by side, pleasant companions in youth, as they will be sympathizers and helpmates through the remainder of the journey of life? Those schools, established for the whole people, are to become more and more the pride of the whole people,—not a charity for any, but a privilege for all.

Children admitted into the Primary School at the age of five, commencing with the first rudiments of knowledge, advance step by step, completing one course, and being promoted to a higher grade, with each half-year. Thus, in three years, with reasonable diligence, they may reap the full advantage of the Primary School, and be prepared for that examination which shall introduce them to the Grammar School. Here a new era commences, and the pupils beginning at the lowest round mount upward, by regular degrees, from one department to another, through the prescribed branches of study, till at the age of thirteen or fourteen they are ready to graduate from the Grammar, and enter upon the still more advanced studies of the Latin, the High and the Normal Schools.

Three thousand five hundred and eighty-five have been thus promoted during the past year from the Primary to the Grammar Schools; and seven hundred and seventy-six have entered the High Schools.

Having passed in this manner through the successive stages of progress, they are presumed to have become honorably fitted, either for a still higher course at the College or the Scientific Schools, or to enter at once upon the active duties of life, practically engaging in mercantile and commercial business, or in those labors of enterprise and skill which may confer large benefits upon the city or country; others, of the gentler sex, may fulfil important service amid the cares of domestic life; while a more limited number may become instructors in the very schools in which they were

first taught, and thus be able to impart to others benefits similar to those which they have personally received.

Who can watch the successive steps of such a progress, following in thought the child from its earliest lesson in the alphabet, to the hour when—enriched by varied acquirements, and with, as it is to be hoped, well-developed and harmoniously balanced powers—it goes forth to the toils and trials of the world—and not feel impressed by the importance of the work undertaken and accomplished?

Looking upon the schools, we behold visibly before us the future Commonwealth. How speedily will the little beings there assembled become the active citizens! The age that is to be, we can thus mould and shape. The advancing time will be sealed and stamped with an enduring impress; direction may be given to thought, bias to principle, and an impulse for good imparted, which shall never be wholly lost. When these twenty-seven thousand children are called to fill the opening spheres of duty, and to occupy places of trust, shall they be able to do so with ability and honor? This is the question Providence calls upon us to answer. Not easy is it to overestimate such obligation and responsibility.

Retrospective View.—Without attempting any elaborate historical sketch, a momentary glance into the past is almost irresistible. Such a retrospective view shows us two interesting facts—one of general application, the other having more special reference to ourselves.

First, a study of the past teaches us that popular education is, in itself, not only one of the means to promote an advancing civilization, but it is also a legitimate *fruit* of that civilization. When Christian civilization reaches a certain point, this is a providential landmark showing the rise of the great tide.

The second fact (referring directly to ourselves) is this, that just here the radiating lines of light centre. In other words, while there have been educational movements at different periods, the idea of a free popular education for the whole people, at the expense of the whole people, as an absolute duty and right, was first established and faithfully carried out by our fathers here in New England.

If we go no further back than the fourteenth century we find education so limited, that many of the leading men of that period could not even write their names. The first grand impulse came with the Reformation. The new life infused by that great epoch led the people of Holland, Scotland and Germany to demand a wider and better instruction. In France, as early as 1588, the Third Estate insisted that the children, even of the poor, should be “instructed in all good learning, according to their capacity;”—even the nobles of that time demanding that “parents who neglected to send their children to school should be subjected to compulsion and fine.”

But all this had an ecclesiastical bearing. It was indeed an advance in Christianity, but not yet freed from narrow limitations and party restraint.

In 1705, there was established, at Rouen, a fraternity known as the Brethren of the Christian Schools, who devoted themselves to the instruction of boys "in all that pertained to an honest and Christian life." In 1800 this brotherhood had under its care over nineteen thousand schools, between one and two million pupils. All the members of this association were by a rule of their order officially enjoined "not to talk gossip, and to be sparing of punishments."

Another society was established at Paris in 1788, as one result of which the police of Paris declared, that after the establishment of these schools the expenses of their department were thirty thousand francs a year less than before. Still, notwithstanding such honorable examples, the system of education was miserably defective, besides being hedged in by special denominational restrictions.

Without expatiating upon this subject, the simple fact we would urge is this, that an advancing Christian civilization, when it has reached a certain point, has always developed these educational tendencies; and yet the gradual has been this development, that not until within the last two centuries, did there exist, anywhere on the globe, a system of Free Schools for a whole people.

While for us, as well as for all who are willing to accept it, stands as an ever memorable fact, that here, in Massachusetts, was the first place on the face of the earth where this sublime idea of a popular education was freely and fully tried. Here it was, for the first time among men, that the founders of our Commonwealth saw, with clear vision, that great law of Providence, revealed through the gospel, by which the elevation of society as a whole, is the indispensable requisite to its own well-being. They publicly recognized as a duty, and accepted as the very rule of their life, the truth that the entire people, the humblest as well as the most exalted, should possess those intellectual and moral advantages, which would raise them, as a people, to the highest level of prosperity and progress of which they were capable.

"When New England was poor," said the ancient record, "and the people were but few in number, there was a spirit to encourage learning. Thus, in 1638, John Harvard bequeathed half of his estate, and all his library, for the endowment of a College. One of the devout men of that period says, in 1642: "After God had carried us safe to New England, and we had builded our houses, provided necessities for our livelihood, reared convenient places for God's worship, and settled the civil government, one of the next things we longed for was to advance learning, to perpetuate it to posterity;" * and, in 1647, in the very infancy of

* New England's First Fruits. Mass. Hist. Coll. I. p. 202. .

colony, it was made an imperative law. "To the end that learning may not be buried in the graves of our forefathers, every township, after the Lord hath increased them to the number of fifty householders, shall appoint one to teach all children to write and read; and where any town shall increase to the number of one hundred families, they shall set up a Grammar School; the masters thereof being able to instruct youth, so far as they may be fitted for the University." *

Here we have a distinct recognition of the whole people, and an expansion of the educational idea from the first elementary knowledge, to preparation for the University. "In these measures," says the historian,† "especially in the laws establishing Common Schools, lies the secret of the success and character of New England. Every child, as it was born into the world, was lifted from the earth by the genius of the country, and in the statutes of the land, received, as its birthright, a pledge of the public care for its morals and its mind."

This work, so nobly begun, was consistently carried forward, till John Adams, more than a century after, and just midway between us and that earlier date, could say,‡ "The public institutions in New England for the education of youth, supporting colleges at the public expense, and obliging towns to maintain Grammar Schools, are not equalled, and never were, in any part of the world."

That principle, so long ago planted, has from that day continued to prosper—bearing profusely the richest fruit! How has the growing thought widened over the whole continent, till now, through the vast valley of the Mississippi, and beyond the Rocky Mountains, it makes visible its splendid results! What the Pilgrims began, on the shores of Plymouth, is in our time rounding, to its full circle, on the borders of the Pacific.

The Cause of Education abroad.—Not only in this country, but, by a reflex influence, results are seen beyond the Atlantic. Whether the originating impulse came from the inspiring ideas and quickening example of our fathers; or whether these movements abroad were the necessary fruit there of that Christian civilization of which we have spoken, we need not pause to inquire. It is enough to know that since what was so successfully commenced here—where our fathers, having left behind them centuries of wrong, through their self-sacrificing spirit and far-seeing wisdom, united to an indomitable courage, advanced humanity by a thousand years—a perceptible transformation has been gradually taking place in the countries of the old world. Despotism has been forced by slow degrees to relax its hold. The multitude of the people are becoming aroused to a

* Colonial Laws, 74, 186.

† Bancroft's History of the United States, Vol. I. p. 459.

‡ The Adams Letters, Vol. III. p. 74. Philadelphia, 29th October, 1775.

consciousness of their duties and their rights. In Prussia, Switzerland, Belgium, Holland, France, we find the same great work going on.

Holland.—When the distinguished naturalist, M. Cuvier, was deputed by the University of France to visit Holland, for the purpose of examining the schools, he reported that the Primary Schools of that country were above all praise. This was in 1811, when no such schools were known elsewhere in Europe. And Matthew Arnold, professor in the University of Oxford—the worthy son of the beloved Dr. Arnold of Rugby—appointed by the Royal Commissioners of England in 1859, to investigate the systems of popular education on the Continent. In his report he affirms that he saw “no Primary Schools worthy to be matched with those of Holland.” And yet, down to the close of the last century, the Dutch schools, where they existed, were of a very inferior character. What has been accomplished of reform in that, or the other countries of Europe, has been effected since then. “Until within the last eighty years,” says Arnold, to whose admirable reports we gladly refer in full, “the schoolmasters were ignorant; and the instruction beggarly.”

It is interesting to trace the earliest movement in that country, which came from an organization known as the Society for the Public Good. This association extensively established schools and libraries for the laboring people. In 1809, this society was composed of seven thousand working members. The government of Holland, seeing the excellence of their efforts, gradually adopted similar methods of action. The magistrates of Amsterdam ordered their Public School edifices to be erected according to a plan suggested by this body. Educational laws were also enacted in order to carry forward the same views. Two measures were adopted, in particular, which had never before been recognized in Europe, and which became the source of eminent success. First, a thorough system of inspection for the schools; secondly, a thorough system of examination for teachers. These two rules, faithfully carried out, have given great efficiency and completeness to the educational system of Holland. “Take care,” said the chief commissioner of popular education in Holland to M. Cousin, when he visited that country, “take care how you choose your inspectors; they are men whom you ought to look for, with a lantern under your hand.”*

At the head of each school district is an inspector, while the various inspectors form a provincial commission; and this commission has charge of the primary instruction. The full commission meet three times a year and receive reports from each inspector. In addition to visiting the schools, they examine all the teachers. Every Dutch schoolmaster, before being received into the office of teacher, must first pass a searching ex-

* De l'Instruction Publique en Hollande—M. Cousin, Paris, 1837, p. 80.

nation. To engage nominally in the profession, he must obtain a general admission ; to enter upon the duties in full, he must have, besides, a special certificate. Having obtained this, a salary is granted sufficient to give reasonable independence ; a remuneration superior to that given in surrounding countries. The ablest teachers having been secured, they become the heads of most admirable schools. Thus the whole standard of instruction has been raised, and the cause of education has gained a strong hold upon the minds of the people. So universal is the attendance, that in 1840 there was not one child to be found in Haarlem, of competent age, who could not read and write. In addition to the Elementary and Training Schools, there are Normal Schools ; the latter having been established in 1816. The Public Schools, as a general rule, in all the towns, are well-regulated and well-taught.

In 1857, with a population of between three and four million, there were in Holland 2,478 Primary Schools, with a staff of 2,409 principal masters, 1,587 sub-masters, besides numerous assistants ; while in the day and evening schools there were 322,767 scholars. It is in a special degree through these schools, and the attention given to them by the most intelligent minds, that Holland, within the last fifty years, has become eminently distinguished.

Such is the condition of popular education in that country where the Puritan Fathers found a temporary home, and from whence, embarking at the little town of Delfthaven, they came to these shores. What man, with one drop of Pilgrim blood in his veins, will not feel a throb of satisfaction in the thought of such honorable effort for the elevation of the people, in the land where Brewster and Bradford, Carver and Winslow, found a hospitable asylum before they crossed the sea to step upon old Plymouth Rock ! Fitting it was that the country which gave them a welcome should itself become characterized by the same ideas. It is as if some of the seeds which were to be brought here by the *Speedwell* and the *Mayflower*, dropped by the wayside, and were yielding there, at this day, their harvest of fifty and an hundred fold.

France.—In France, from the time when M. Guizot was appointed Minister of Public Instruction, in 1838, the work of popular education has been going steadily on. With a population of between thirty-six and thirty-seven millions, it numbers, in addition to its other schools, over sixty-five thousand Primary Schools, supported at an expense of what is equivalent in our money to more than two million of dollars, while in all her schools two millions and a half of children are taught, at a cost of over six millions of dollars.

The primary teachers were empowered to open schools for adults. As an evidence of the appreciation, on the part of the people, of this opportunity of instruction, and the rapid growth of the schools, it will be sufficient

to state that in 1837 these schools instructed 36,965 working people; in 1843, over 95,000; and in 1848, more than 115,000.

Public instruction in France is now governed by the law of 1850, which law was strengthened by additional decrees in 1852 and 1854.

One important provision, long familiar in its letter and spirit with us, but less common on the other side of the Atlantic, and which it is said, on good authority, is strictly carried out in France, is found in the guarantee of religious liberty—the law not only encouraging, but emphatically requiring, “reciprocal friendship and mutual toleration.” Connected with the admirable system, in France, for popular education throughout that country, there are, in addition to the schools, sixty-three Lyceums and two hundred and forty-four Colleges, in which free admission is provided for the poor and for all persons of limited means.

In 1855, the grant of the State to the Lyceums was 1,300,000 francs, and to the Colleges over 98,000 francs.

The total expense of primary instruction in France in 1856 was 42,506,012 francs,*—over eight millions of dollars. Of the 3,850,000 children thus taught, 2,600,000 pay whatever they may be able, and 1,250,000 are wholly free. Of those instructed, 2,150,000 are boys; 1,450,000 are girls. There are 250,000 in Mixed Schools. The almost unanimous feeling in France is against Mixed Schools.

In addition to 65,000 Primary Schools, there are 2,684 Infant Schools; besides which, there are Adult Schools, Apprentice Schools and Needlework Schools, thus making in France, at least seventy-five thousand places of instruction for the poorer classes, in which the people and their children are freely educated.

Even in the largest towns of France, where the population is most dense, the masses of poor children are not left without instruction; and not only is the means of education offered freely, in teachers and school edifices, but books as well as schooling, are provided and distributed without expense to the pupils. The city of Paris alone expends a sum equal to more than \$500,000 each year in the interests of popular education.

Can we not perceive in this generous provision for the instruction of the people, some explanation of the increasing influence of France, the taste and intelligence of her people, and the successful development of her resources? That energy in war, which, with impetuous force, sweeps all before it like the whirlwind; and that cheerful vivacity in time of peace—contentment blended with playful mirth, and a perception of beauty which moulds everything it touches into forms of grace—who shall say how largely France is indebted for these to her generous system of popular instruction?

* Budget de l'Instruction Publique, pp. 164, 167.

Italy.—The new kingdom of Italy has proved itself worthy of added confidence and admiration for the early effort it has made to establish a system of universal education for all classes of its people. As a wise preparatory step for a continued supply of thoroughly qualified teachers, Normal Schools have been established. There are at present forty, with over two thousand students. The whole movement is far in advance of anything which has hitherto been known in that country.

The Elementary Schools are also a special honor to the new government. In these schools there are now 800,000 children, 452,000 being boys. These are under the care of 21,857 teachers. There are also schools for adults, and schools for advanced studies; all the instruction being wholly gratuitous.

There have also been opened Infant Schools and Evening Schools. In Genoa, the birthplace of Columbus, where the house in which he resided is still pointed out, and where has lately been erected a magnificent monument to his memory, there are four Infant Schools, numbering over a thousand children; and in the Genoese district there are thirty-two schools for adults, numbering some two thousand pupils.

Through Italy, where a community is not able to establish schools without assistance, the general government readily offers its aid. In this way, within one year, half a million of dollars in gold have been appropriated. Thus is fresh impulse given to the people, while depth and durability are imparted to the grand work of national reform.

England.—If we turn to England, strange to say, we find that there the least is done, through any national system, for the education of the great masses of the people. Her magnificent universities are well known, and her pre-eminent schools for the sons of the nobility—yes, and her splendid charities for a select few; but with reference to her middle classes, and her poor population, the neglect is both surprising and shameful.

Scotland, by honorable effort, has gone forward upon a path of her own. Long and justly has she been distinguished for her popular schools. The country of Wallace and Bruce, of Burns and Scott, the land of the mountain and the heather, holds a high position among the nations for her widely-diffused intelligence; a peasantry who know how to think, and what to think; a people whose honor cannot be bent, and whose independence cannot be broken.

England has yet something to learn. It is estimated by the highest authority, that in England more than two millions of children are left to grow up in total ignorance. Before the parliamentary committees, the testimony has been most startling. Observe the following: "I am vicar of a parish which contains a population of 10,000 souls, and I grieve to say there is but one school-room in it." "I am curate," says another, "of a poor parish of 3,000 of population, and there is no school-house of any

kind." And again, "The population of the village of which I am an incumbent, is not less than 20,000, there is no Free School in the whole place; hundreds of children receive no education whatever." Such is the evidence from innumerable witnesses.

When Horace Mann returned from Europe, he said, "England is the only country among the nations of Europe, conspicuous for its civilization and resources, which has not, and never has had, any system for the education of its people." "It is the country," he adds, "where, incomparably beyond any other, the greatest and most appalling social contrasts exist;—where, in comparison with the intelligence, wealth and refinement of what are called the higher classes, there is most ignorance, poverty and crime among the lower. * * * And yet, in no country in the world have there been men who have formed nobler conceptions of the power, and elevation and blessedness that come in the train of mental cultivation; and in no country have there been bequests so numerous and munificent as in England. Still, owing to the inherent vice and selfishness of their system, or their no system, there is no country in which so little is effected, compared with their expenditure of means; and what is done only to tends to separate the different classes of society more and more widely from each other."

Such was the opinion of a candid and accurate observer twenty years ago. The same testimony is given by Professor Arnold, of Oxford, to-day, one of the most candid, clear-sighted and truthful of men; English by birth, culture and taste; associated as a scholar and man of letters with students in the University. And yet, with this natural bias, he plainly declares to his countrymen: "Our middle classes are the worst educated in the world;" and, speaking of the more deplorable population, he calls them an "obscure embryo, moving in darkness;" * * * "the immense working class, now so without a practicable passage to all the joy and beauty of life!"—"England," he says, "has not yet undertaken to put the means of education within the people's reach."—"I should mislead the English reader," he says, "if I should let him think that I found in France a schoolless multitude, like the 2,250,000 of England." There are "over seventeen thousand schoolless children" in Manchester alone; and "in London it is estimated that there are some two hundred thousand who, ignorant and degraded, are neither at school nor at work."

But, aside from the most destitute, Arnold eloquently pleads for the middle classes as well. "The aristocratic classes in England may, perhaps, be well content to rest satisfied with their Eton and Harrow," "but the middle classes in England have every reason not to rest content with their Private Schools." "The State can do a great deal better for them." He is convinced that important movements in England are near at hand. "Undoubtedly," he says, "we are drawing on towards great changes." It is almost certain, he writes, that the English people "will throw off the

tutelage of aristocracy." "The masses of the people in this country," he says, "are preparing to take a much more active part than formerly in controlling its destinies." "The time has arrived when it is becoming impossible for the aristocracy of England to conduct and wield the English nation any longer." "The superiority of the upper class over all others is no longer so great; the willingness of the others to recognize that superiority is no longer so ready." "While it is losing its power to give to public affairs its own bias and direction, it is losing also its influence on the spirit and character of the people which it long exercised." "The course taken in the next fifty years," he writes, "by the middle classes of this nation will probably give a decisive turn to its history." Calmly, considerately, urgently, he argues for a wider, and more adequate education; pressing the subject home as the duty and necessity of the times.

Turning to America, he alludes to "its boundless energy of character," and "its boundless field for adventure," "where the people have unquestionably not been enervated by education." "I speak," he says, "with more than respect, with warm interest, of a great nation of English blood; with which rests, in large measure, the future of the world."

As an evidence of the reflex influence of this land upon the countries of Europe;—the prominence given to those views of education which originated here;—and the special recognition of Massachusetts as the scene of their development, a remarkable illustration is found, in a speech made in the British House of Parliament by that brilliant essayist and distinguished historian—Thomas Babington Macaulay.*

In advocating the cause of "the education of the people as the first concern of a State," he declares that it is not only an efficient means for promoting and obtaining that which all allow to be the main end of government, but that it is "the most efficient, humane, civilized; and, in all respects, the best means of attaining that end."

"This is my deliberate conviction," he adds, "Sir, it is the opinion of all the greatest champions of civil and religious liberty, in the old world and in the new, and of none, I hesitate not to say it, more emphatically, than of those whose names are held in the highest estimation by the Protestant Nonconformists of England. Assuredly, if there be any class of men held in more high respect than another, it is that class of men, of high spirit and unconquerable principles, who, in the days of Archbishop Laud, preferred leaving their native country, and living in the savage solitudes of a wilderness, rather than to live in a land of prosperity and plenty, where they could not enjoy the privilege of worshipping their Maker freely, according to the dictates of their conscience."

"Those men, *illustrious forever in history*, WERE THE FOUNDERS OF THE COMMONWEALTH OF MASSACHUSETTS. Though their love of freedom and

* See Macaulay's Speeches. London, 1853: Vol. II. p. 211.

conscience was illimitable and indestructible, they could see nothing servile or degrading in the principle that the State should take upon itself the charge of the education of the people. In the year 1642 they passed their first legislative enactment on this subject, in the preamble of which they distinctly pledged themselves to this principle—that education was a matter of the deepest possible importance, and the greatest possible interest, to all nations and to all communities; and that, as such, it was in an eminent degree deserving of the peculiar attention of the State.

“I have peculiar satisfaction in referring,” he adds, “to the case of America. What do we find to be the principle of America, and of all the greatest men that she has produced? ‘EDUCATE THE PEOPLE,’ was the first admonition addressed by Penn to the Commonwealth he founded. ‘EDUCATE THE PEOPLE,’ was the unceasing exhortation of Jefferson. ‘EDUCATE THE PEOPLE,’ was the last legacy of Washington to the Republic of the United States.”

Many men in England, such as Bright and Mill, Goldwin Smith and a host of others, feel that it is the reproach of that country, with her Oxford and Cambridge, her Eton and Rugby, that she has, as yet, done so little for the instruction and elevation of the great masses of the people.

At a recent meeting of the Social Science Congress, held at Manchester, Mr. Bruce, a distinguished member of parliament, urged the superiority of the American system of Common Schools on the people of his own country, insisting upon the necessity of Free Schools, alluding to New England as an incentive and an example.

John Bright, in a speech lately made in England, proved by statistics, that in Manchester and Salford there are more than 50,000 children who receive no instruction whatever. He then pointed to the New England States, where he declared there was a more equal condition, and universal comfort, than could be found in any other country or age of the world. And this, he added, is to be traced not to the soil or to the climate, but, as I believe, to the extraordinary care which the population, from the days of the Pilgrim Fathers until now, have taken that every child, boy and girl, shall be thoroughly instructed.

Thus do we find that the subject of popular education is exciting a large and growing interest among the people of different nations; and that, in this connection, the schools of New England are attracting observation, and exerting a constantly increasing influence.

If, therefore, our fathers are justly honored, both here and abroad, for the work they so nobly begun, let this generation feel the responsibility which rests upon them, not only to sustain that work, here and now, for the good of our own people and the benefit of mankind, but so to improve it, that it shall go down, with added advantages, through all coming time.

The Gradual Growth and Expansion of the School System.—It is now two hundred and thirty-one years since the first Public School was established in Boston, (1635,) which takes us to within five years of the very commencement of the town. This school continued to be the only place of public instruction for the space of forty-seven years; when, in 1682, two other schools were established for instruction, principally in writing and arithmetic. During this period, the only reading book used in the schools was the Bible. Then, prompted by the desire of a more thorough knowledge in grammar, came the formation of a department bearing that designation, from which our popular term of "Grammar Schools" originated. The separate departments of grammar and writing, divided the pupils between them, the scholars passing alternately each half-day from the one department to the other; the grammar department being generally upon the upper floor, and the writing school upon the lower floor, forming two independent systems. This was the origin of what was afterwards known as the two-headed system, which continued down to 1847, when, after several unsuccessful efforts, it was finally abolished. The condition of the schools, as has just been described, continued for more than one hundred years; and, through all this period, and for half a century after, the whole privilege of the Public Schools was limited to boys. It is a curious fact in the history of our schools, that not until 1789 were girls admitted, and then only on account of a peculiar circumstance, which also shows us the primitive character of the times. From the middle of April to the middle of October, so large a number of boys were engaged in agricultural or industrial labor, that the schools became greatly deserted; and to occupy in some way this incidental vacancy, girls were allowed, during the interval, to attend the schools. This summer privilege for girls was continued for thirty years, when it was found to be so satisfactory in its results, that the time was extended to eight months; but not until thirty-nine years after they were first admitted to the schools, and not until ninety-three years after the earliest Public School for boys was established, were the girls admitted to a full and equal share in all the privileges of the Public Schools. Here, also, is manifest the truth,—“first the blade, then the ear; after that; the full corn in the ear.”

But still further, the gradual development of affairs is observable in the fact, that for one hundred and eighty-two years after the establishment of the earliest Public School, no child was admitted to the free schools until the age of seven years. Children, before that, were taught at home, or under private care; there was no public provision for the instruction of children under that age. Not until 1817 was the earliest effort made in this direction, when a committee was appointed to consider the subject, who reported against it. But the year following, the need was so keenly felt, that a petition was drawn up by the citizens, which led to a recom-

mendation in town meeting, June 11, 1818, with a vote that five thousand dollars from the public fund should be appropriated to defray the expenses of a new order of schools.

Such was the origin of the Primary Schools,—numbering at this day two hundred and fifty-seven teachers, and twelve thousand five hundred and fifty-three pupils. Here also is the noticeable fact, that these schools, at the beginning, were not under the immediate supervision or care of the regular School Board, but were under the direction of thirty-six gentlemen appointed “to provide instruction for children between four and seven years of age.” Thus there came into existence two distinct orders of schools, under the care of two wholly separate bodies of men.

In thirty years these Primary Schools had so increased, that the expenditures, from five thousand dollars had become over one hundred thousand dollars, and the committee of thirty-six gentlemen had expanded to one hundred and ninety. They virtually filled their own vacancies; exercising extraordinary privileges; and, disconnected from the school board, the whole arrangement lacked harmony, and caused often a conflict of purpose and opinion. The mechanism was anomalous, and became more and more unmanageable. The whole condition of things had grown up by circumstance, and needed a complete change and readjustment. Nothing but the fact, that both bodies of men were public-spirited, intelligent, judicious and honorable, rendered the working of this double-system endurable. Twice the question of an entire change was agitated, in 1839 and in 1849; when finally, in 1852, a special communication was made by the mayor to the city council, which was referred to the Committee on Public Instruction. A conference was held with both school committees; and after full deliberation on the remodelling the city charter in 1854, a thorough change was effected. The separate Primary committee was abolished, and a new organization was appointed, composed of six gentlemen from each ward, forming a board of seventy-two members, each holding office for three years, one-third annually going out, and an equal proportion coming in; giving the character of permanence and renewal.

Since that period the Grammar and the Primary Schools have been under the direct care of one body of men, who, divided into sub-committees, have charge of their several districts, each clothed with a certain individual power, yet each amenable to the central board. The detail of this organization has been very carefully considered and wisely arranged, and the working of it has been, thus far, very perfect.

The Primary Schools, which for so many years had not been under the care of the school board, except very indirectly, were still held, as it were, apart from the Grammar Schools, with which they were, by nature, so vitally connected. These Primary Schools were avowedly for the very purpose of preparing pupils for the Grammar Schools, and yet the head-

master of the Grammar School,—though he could look into the several departments of his own school, and direct the courses of education, so that the lower should harmonize itself with the higher,—could not thus go into the Primary School, where all the early foundations of education were being laid, except semi-annually, and then, for the sole purpose of examining the graduating class, just as that class was really to step into his own school. There were three years of study, antecedent to this, in which habits of thought were formed; and views, correct or erroneous, were being established; the young mind, at its most impressible period, receiving a bias which would in all probability continue; and yet the experienced, well-qualified and thoroughly-educated head-master could not go into these Primary Schools, to correct mistaken methods, to offer salutary suggestions, and, in fact, from the earliest moment, in some respects the most important moment of all, to exercise a directing care.

Many of the teachers in the Primary Schools, young and inexperienced, collected under one roof, were pursuing their separate methods. It was evident, to many observers, that there was need of some competent master-mind to direct and harmonize the whole.

To effect this has been one of the leading efforts of the past year; and the final action of the board, your committee believe to be one of the most important measures, yet introduced, for the advancement of the schools. We believe if the general views proposed are faithfully adhered to, they will carry forward our whole educational system, and form a new era in our schools.

The superintendent of schools had repeatedly urged the suggestion. At length, in June, 1865, at a regular meeting of the board, a special committee of five was appointed, to consider and report upon this subject. This committee having carefully weighed the matter, at the meeting in December, had leave to report in print. The measures proposed in this report have been the subject of much deliberation on the part of the board, and their decisive action has led to the final, and as it is believed, most salutary step.

At a full meeting of the school board, October 1, 1866, called expressly to act upon this subject, after a general expression of opinion, the following order was passed:—

CITY OF BOSTON,
IN SCHOOL COMMITTEE, Oct. 1, 1866. }

Ordered, That Chapter X. of the Rules and Regulations be amended by inserting, after Section 2, the following, to be designated as Section 3; and that the numbers of the subsequent sections be changed to correspond therewith.

SECTION 3. The masters of the Grammar Schools shall perform the duties of principal, both in the Grammar and Primary Schools of their respective districts; apportioning their time among the various classes, in such manner as shall secure the best interests, as far as possible, of each pupil throughout all the grades; under the direction of the district committees.

Attest:

BARNARD CAPEN, *Secretary*.

Emulation.—In regard to emulation, by a vote of the board, during the past year all medals have been prohibited henceforth from the girls; so that the evils, connected with medals, are now concentrated upon the boys.

The superintendent of schools, while he gives his hearty approval to this step, adds that it is his earnest hope that the Franklin medals may speedily share the same fate.

The subject of a diploma, to be given to all who shall creditably go through the prescribed studies; the exact character of the diploma, and the principles upon which these diplomas shall be distributed, remain for the consideration of the board.

Discipline.—Much has been said upon the subject of punishments. It is the wish of the school board, by every reasonable means, to inculcate gentleness. The rule applying to teachers is explicit: "All instructors shall aim at such discipline in their schools, as would be exercised by a kind, judicious parent in his family." It is also required that every instance of punishment shall be reported, with an exact statement of the degree and the cause.

Is the question asked, "Why not prohibit punishment altogether?" It may be said in reply, that no system of national, State or municipal government, is known to exist among men, in which punishment for violated law has been wholly set aside. Under the Divine government, the transgressor is not entirely exempt from penalty and pain. What, therefore, the wisest men, in all ages, have found essential as an underlying principle; and what the Infinite Mind has interwoven with all the plans of His providence, the board feel may wisely be retained, as a reserved power, for the support and security of a proper school-discipline.

By a simple method, punishment will cease:—if the children do what is right there will be no penalty; but, in case of deliberate wrong-doing, and particularly of persistent wrong-doing, there must be positive authority somewhere. The spirit of misrule, lawlessness, and insubordination, wherever they exist, should be brought under speedy subjection. Anarchy and rebellion must receive, with promptness, a decisive check. Physical coercion is not agreeable, still there are things worse than physical coercion; and, if obedience cannot otherwise be obtained, then let this control. The power to rule must be firmly maintained; but (and there is no inconsistency in this) with the reserved power, there should be a clear recognition of the law of love,—a consciousness of the immense advantage of being able to hold sway solely by moral force;—while even in the extremest cases the moral element should predominate. It is important, under all circumstances, in dealing with the young, to cherish a spirit of true humanity. Moroseness of temper and despotic harshness should, without delay, be discarded from every school-room forever.

At the beginning, let the right instructors be chosen—teachers who can safely be trusted with power, who will know how to hold authority with considerate judgment; careful in requirements; avoiding unreasonable antagonisms; withdrawing, as far as possible, incentives to wrong-doing; calm, self-possessed, mild, yet firm—such teachers, we may be very sure, will maintain that benignant discipline so well described in the rule as exercised “by a kind, judicious parent in his family.”

Vocal and Physical Gymnastics.—This department in our schools unites, upon philosophical principles, the best exercise of the vocal organs, with a thorough system of physical training. Professor Monroe by his instructions has not only conferred great benefit upon the pupils, but has rendered valuable service to the teachers; enabling them to carry out his plans; developing the physical powers; and aiding, in a remarkable manner, the management and modulation of the voice in reading;—thus laying a good foundation for the instructors of music, the advantages of which cannot fail to be seen, even by the most superficial observer.

Instruction in Music.—Much as has been done for instruction in music through former years, we believe that never was the whole system so complete as at the present time. Formerly there were separate plans conducted by teachers who had no uniformity of method or purpose. Now, under the general direction and supervision of the committee on music (of which it is enough to say that Dr. J. Baxter Upham has been the efficient chairman for the last nine years,) the three departments of Primary, Grammar and High Schools have been placed in the hands of Messrs. Zerrahn, Sharland and Mason, all able teachers, peculiarly adapted to their work, possessing individual gifts, and acting in unison with each other,—each with a remarkable faculty for imparting knowledge, and awakening enthusiasm in the minds of the pupils. The science of music, in its elementary principles, is taught, even to the younger children, in so thorough a manner, as will leave nothing to be unlearned; inducing a readiness to advance, with perceptible rapidity, under the instructions which will follow.

Music, as conducted in our schools, exerts now an elevating and refining influence through the whole process of education. It is not only the cultivation of one of the most marvellous and beautiful gifts God has bestowed upon his children; offering a constant resource, (a joy and a solace, for all the coming discipline of life,) but it is more than this,—it is an actual help in the development and culture of all the other faculties. The whole mind moves with greater ease and success because of the influence thus exerted. The mental faculties are sympathetic; the spirit of music, blending with, and flowing through all, like a subtle magnetic life. As there is a hidden harmony in all created things, melody being elicited by wind and wave; thus, wrapped up within the nature of the child, are powers, which never

work so harmoniously, and therefore so advantageously, as when this gift is allowed to develop itself in unison with the whole educational process. It is more than a mere pleasure, even when pursued as a recreation. According to the etymology of that word, it may become re-CREATION,—melody, with the breath of life, RE-creating the whole nature. Have we not all felt this? Is there, at any time, a prevailing listlessness, a sense of exhaustion or fatigue? Call up the delightful exhilaration of music. How will one verse of a spirited song dispel the clouds, sending sunlight through every mind!

What a new interest does the cultivation of music in the schools throw into the affections of home! How many firesides possess, through this gift, an added charm! Separate as the schools are from the church, yet it is pleasant to remember that every church, and the Sunday school connected with each church, has the advantage of all the knowledge of music that has been thus gained. The correct ear and disciplined taste, united with the well-developed and richly-modulated voice, has come from the school. Thus a new power has been unconsciously introduced from the school into the sanctuary, kindling into added fervor the services of the house of God. Whenever the voice of the great congregation unites in anthems of praise, in that full tide of melody, sweeping onward like the waves of the sea, we have one of the grand results of the teaching of music in our Public Schools.

The constant, systematic, thorough teaching of music to more than twenty-seven thousand children, in every walk of life, through a whole city, and that persistently, from one generation to another, must produce an influence for good, which cannot but be widely and deeply felt.

Drawing.—While we rejoice at the proficiency which has been acquired in music, we think that drawing is worthy of far more attention than is now given to it, not as an ornamental branch of education, superfluous unless as a matter of show, but as a most desirable discipline both for the eye and the hand, essential to the best culture of the perceptive faculties, identified with habits of pure taste, and in many respects of the greatest practical advantage, not only at the time of youthful study, but through the whole of the maturer life. There is hardly an artisan who would not be a better workman, if he knew how to handle a pencil; and neither a merchant nor a professional man would be the less qualified for his duties, if he knew how to draw a plan, or sketch a landscape.

This study is connected with habits of correct observation. It opens the eye to nature. It is in itself a language. It becomes to the possessor, forever, a pleasant resource, while its pursuit is, in nearly all cases, so delightful as to be a joy rather than a task. Besides which, it is an actual aid in the development of the other faculties. But we need not attempt here to enumerate the many advantages connected with this study, or the

great addition of power which the possession of this gift imparts to the teacher.

We would make drawing one of the requisite qualifications on the part of a teacher; and would also have more time devoted to its instruction in our schools.

School Committee.—R. C. WATKINSON, HENRY A. DRAKE, E. D. G. PALMER, ORIN T. WALKER, JOSEPH D. FALLON, SALEM T. LAMB, CALVIN G. PAGE.

The Primary Schools are in a prosperous condition. From year to year, I can see a steady and constant progress, both in the methods and spirit of instruction and in the character of the discipline.

Although I am happy to give my testimony to the great general excellence of these schools, I cannot honestly say there is no room for improvement. I should be glad to see in them more of teaching and less of the mere hearing of recitations, especially in the lower classes. Tasks are good; but there are other good things besides. We must understand that a school wholly devoted to task-work, and the memorizing of text-books, cannot be a first-rate school. All the high pressure, or nearly all, that is injuring the girls in Private and Public Schools, of all grades, results from the attempt to learn things that had better not be learned at all—certainly not in the way they are learned. Writing and spelling occupy much of the time in the high division of the Grammar Schools. I can see no real necessity for this. With all our facilities for teaching, these branches ought to be learned sufficiently well before the pupils reach the graduating class. This would be the case if the masters were not chained to the first divisions of their schools.

The location of school-houses is another matter which may very properly be considered in this connection. Other things being equal, it is desirable, of course, that the school-house should be placed in the centre of the district from which the pupils are to be drawn. But some persons seem to consider it the one essential thing in school architecture to locate the building in the exact geographical centre of the territory to be accommodated, wholly regardless of the fitness of the spot in other respects. The interests of many schools have been sacrificed to this absurd notion. In country districts, we see its practical illustration in the school-houses perched upon bleak sand hills or planted in swampy hollows. I am sorry to say that some of our schools have suffered not a little from the operation of this idea. Wherever a school-house is located, it should, at all events, have good surroundings, that is, it should be in a good neighborhood; the best attainable in respect to morals, health, quietness and taste. The point I would make is that such requisites as these are far more important than the saving of a few rods of distance to be travelled over by pupils.

After much study and many efforts, we seem to have settled some

important points in building school-houses, such as the mode of seating, the providing of a separate school-room for each teacher, and the proper model of such rooms as to size, arrangements, and the essentials of the clothes-rooms connected with the school-rooms. In these particulars our more recent school-houses are as good as could be desired. In a pamphlet by G. P. Randall, an accomplished architect in Chicago, containing plans in perspective of several noble school-houses which have recently been erected in the North-Western States, a document well calculated to open our eyes to the extraordinary educational enterprise of that section of the country, I find the following statement respecting the arrangements of school-rooms :

“ It is now pretty generally admitted by practical educators that a single room, large enough to seat from fifty to sixty-five scholars, and exclusively under the supervision and instruction of a single teacher, is better than a larger room, with recitation-rooms and assistant teachers. I make designs for them both ways, but probably not more than one in fifteen with the large room and recitation-rooms attached. As I am generally instructed in this matter, it follows that teachers are almost unanimous in the opinion that the single-room system is the best ; and it is the system adopted by the school board of Chicago in the Public Schools of this city.”

The origin of this system may be easily traced to the Quincy Grammar School-house in this city, erected in 1847-8, the plans and description of which were published in Barnard's School Architecture. Another feature of this edifice as it then was, has not been so generally imitated, but which, I trust, will ultimately come to be considered an indispensable element in every Grammar School-house, namely—a hall large enough to seat comfortably all the pupils accommodated in the several school-rooms. This is the case already in the city of New York.

But in respect to the important elements of heating and warming, we are still unsettled. Within the past twenty years there have been three radical changes made in the mode of heating our Primary School-houses. First, the old-fashioned coal-stove gave place to Clark's ventilating stove. Subsequently this stove gradually went out of use, and in its place the ordinary cylinder coal stove was substituted. Lastly, this stove has been removed and hot-air furnaces introduced. The High School buildings are heated with hot-air furnaces ; and nineteen of the Grammar School buildings are heated in the same way, while two are furnished with different systems of steam-heating apparatus. For ventilation, most of the buildings have Emerson's caps, with a separate ventiduct for each room, furnished with two registers, one near the ceiling and one near the floor. Robinson's system has been applied to one Grammar and one Primary building ; the Normal Hall is furnished with the Archimedean system, and the Prescott School with Leed's caps. To furnish school-rooms in large and high build-

ings with an abundant supply of pure air of the requisite temperature and humidity, for health and comfort, is a difficult problem. Considerable progress has been made, no doubt, towards its solution, and it is hoped that the committee on public buildings will continue to experiment on it, guided by the principles of science and the light of experience, until satisfactory results are reached.

The question as to the maximum number of stories in height to which a school-house should be carried has caused some discussion amongst us. Nearly all the Grammar School-houses are at least four stories high. Several are practically five stories in height, as they have their play-ground on a level with the basement. There can be but one argument thought of in favor of carrying school-buildings up to this great height, and that is the argument of economy. As sky costs nothing, the expense of a building four stories high is less than one of the same capacity which is two or three stories high. But a school-house is never truly economical unless it meets the requirements of health, convenience and safety. In all these respects the four-story plan is decidedly objectionable, and I earnestly hope that it will be wholly and forever repudiated. In Baltimore, a large and fine building has been erected for a Girls' High School. This edifice is only two stories high. There is in the same city another building three stories high occupied by a school of the same description. This school-house is considered too high, and it is proposed to build one to take its place which shall be only two stories high. In this particular the educational policy of Baltimore is certainly wiser than that of our own city, and more truly economical. Our new Primary School-houses are, with a single exception, three stories high, and it is to be hoped that no one will ever seriously think of carrying one to a greater height.

I have said that we seem to have arrived at a definite idea of what a school-room should be in respect to size, arrangements, proportion and seating. This is an important step gained. But what should be the standard number of rooms for a building? This is a question which has very important bearings on the interests of our schools, and it deserves the most serious consideration of the board. In what I have to say on this topic, I do not propose to refer to High School buildings, which constitute a class among themselves. By referring to the preceding list of school-houses, it will be seen that fourteen school-rooms is the number contained in each of the more recent buildings, excepting that of the Prescott School, which has sixteen. The former number of rooms will accommodate about 800 pupils and the latter 900. It thus appears that the Prescott School-house, the latest on the list, is designed to accommodate a hundred more pupils than could be seated in any one of the very large buildings which had been previously erected. Now, in view of our system of classification, the course of study required, the way in which pupils are promoted, the management

in respect to graduation, and the distribution of the work of instruction to teachers of different sexes and grades—considering these circumstances, and looking back upon the operation of the schools twenty years ago, when the number of pupils to a master averaged about one-third as high as it now does, to my mind it is clear that the tendency to increase the size of our schools is a bad tendency. Other things being equal, I should much prefer to send a child to one of our schools of the smallest size rather than to one of the largest. It is true, in general, that a large school may be more efficient and economical than a small one. But there must be a limit somewhere. It is certain that a school may be too large as well as too small. In some cities the schools are too small, in others they are too large. There are two objections to small schools; first, the expense of salaries sufficient to secure first-rate principals—and without such principals you can never have superior schools; and, second, they cannot be perfectly classified, and so the teaching power cannot be applied to the best advantage. On the other hand, as you increase the size of a school, conducted on our present plan, you diminish the chances which a pupil has to get through the school and graduate at a suitable age. I do not say that our schools might not be organized and conducted in such a manner as to obviate this objection, but the accomplishment of this object in the face of the opposition which it would inevitably encounter, is a consummation rather to be desired than expected. Instead, therefore, of attempting to change the organization so as to adapt it to the largest sized building, it seems to me wiser and more practicable to adapt the size of the buildings, hereafter erected, to the organization as it now exists.

But besides the radical objection to the size of the largest buildings already stated, there are others of grave importance. One of these is its tendency to keep large and numerous "school colonies," so-called, in poor and unfit accommodations. Ever since the large schools have been in fashion, we have had almost continually large colonies, or branches of one or more Grammar Schools, stowed away in rented rooms, where the pupils suffer many inconveniences and disadvantages. The Chapman School had colonies scattered about in different buildings for eight or ten years, before it was relieved by the erection of the Prescott house. There are still at this very time eight of our Grammar Schools with colonies of this description attached, comprising twenty-five divisions, with pupils enough to make three good-sized Grammar Schools. The cause of this state of things is plain enough. It is found in the policy of building very large school-houses. For it is obvious, that in order to justify the great expense of erecting one of these colossal edifices, there must be a large surplus of pupils in a given locality. To furnish these colonies with better accommodations, it has been proposed, in two or three cases, to erect buildings for their special use, thus making them permanent branch schools—a remedy worse than the disease,

and tending only to aggravate and perpetuate all the evils of over-grown schools. The true and effectual remedy for this great evil of keeping in operation so many colonies outside the regular school organization, is to be found in the policy of limiting the size of our buildings to reasonable dimensions.

There is another serious evil connected with this system which has been too little regarded. It is the necessity which it involves of bringing together, to make up the schools, the most diverse and heterogeneous materials. I know this is an extremely delicate subject to touch upon, but I am satisfied that it ought to be considered, and therefore I shall venture to throw out some suggestions upon it, and take the risk of having both my motives and my judgment condemned. My sympathies naturally lean very strongly to the indigent classes who are struggling to better their condition. But I remember that the image of justice is pictured to us with bandaged eyes, to symbolize her impartiality. The just rights of all classes should be equally regarded; and while we are anxious to provide every needed facility for the education of the children of the poor, I think we ought not to ignore the educational wants of the wealthy portion of the community, who pay taxes so largely and liberally for the support of our schools. I think that Beacon Hill should be just as well provided for as Fort Hill. But if you build a school-house large enough to accommodate both localities, and require the parents to send their children to that one school or none, it is obvious that both sections are not equally provided for. But this supposed extreme case illustrates the kind of injustice we are doing, to a greater or less extent, all over the city, by the large-school system. I often point with satisfaction and pride, as an evidence of the success of our system of Common Schools, to the fact that boys from the wealthier families, and the sons of the highest officials, are found in the same schools with the child of the African race, and the poor newsboy. But I see plainly that there are necessary limitations, even in our intensely democratic community in the practical application of this idea of bringing together the representatives of the extremes of society in the same school-rooms. The children of the poor must go to such schools as are provided for them, or not go at all; but if the schools provided do not suit the taste of the wealthy parent, he can and will withdraw his children and put them under private tuition. You may say, let him do it, then. That is not however my way of disposing of the matter. I hold to the great principle that Public Schools should not only be free to all, but that they should be made good enough for all, so that, so far as practicable, the children of all classes may attend them. To this end the schools must be adapted to the wants of all. I am well aware that this cannot be done in this country by copying the British system of caste schools, which is based on the idea that the laboring classes, the middling classes and the aristocracy, must each be educated in separate

and distinct classes of educational institutions. I only mean to maintain, and this I do maintain firmly, that the wealthy citizen in Boston ought not to be virtually deprived of the advantages of the Public School, which he would enjoy incidentally, if the school-houses were only kept within the limits as to size which a proper regard to efficiency and true economy demands.

Having now presented some of the objections to the policy of building very large edifices for Grammar Schools, I am prepared to give my answer to the practical question, What should be considered the standard size for a Grammar school-house? I proceed on the assumption that there is a natural limit to the size of such a school for the purposes of economy and efficiency. And in view of the vast and varied interests involved in the management of public education, it is highly important to understand what that limit is, and to make our school architecture conform to it. This principle is aptly illustrated in navigation. The size of the vessel must be adapted to the business, or profits do not accrue. What would be thought of the business sagacity of the ship-owner who should send his coasting schooner to India, and put his Indiaman to the coasting service? What steam is in navigation, classification or grading is in school economy. But the application of steam to navigation has its natural limitations, as the experiment of the Great Eastern has proved. And so has classification its proper limits, as has already been shown in some overgrown graded schools which seem to have been modelled on the pattern of the mammoth steam-ship. To determine the proper size of a Grammar School, it is only necessary to ascertain how many pupils are required to secure a good classification, and then adapt the size of the edifice to the accommodation of this number. To ascertain this number is a practical problem. It is easily solved by experience. Every intelligent educator understands it. All would not of course fix upon exactly the same number, but there would not be an essential difference of opinion among experts. The able superintendent of schools of New Haven thinks that both the Primary and Grammar grades combined in one organization in one building require only about 750 pupils for the purposes of a good classification; and he bases his recommendations respecting school architecture on this conclusion. This I should regard as the minimum number for the purpose, if I must take in pupils from five to sixteen years of age. But our system of Grammar Schools includes pupils from eight to sixteen years of age. Within this range, I consider 500 pupils about a fair average necessary for the purposes of a good classification, and a building large enough to accommodate this number is my standard for a Grammar School organized as ours are. I do not say that I would never build one larger or smaller; I should pay a proper regard to other considerations; in every particular case to be provided for. But this would be my standard, all variations from it being

considered as exceptions. Now, what sort of a building will answer this purpose? I answer, a building nearly resembling the Chapman school-house in proportions and capacity, being three stories high, and having ten school-rooms and a hall large enough to seat all the pupils accommodated in the school-rooms. I do not name the Chapman as a building to copy in all details, nor yet in architectural taste, for it is by no means a model in respect to beauty; but I refer to it as containing the essential accommodations for a Boston Grammar School. We may take pride in showing strangers an enormous four-story school-house, as evidence of our liberal provisions for free schools, but we cannot afford to sacrifice our substantial educational interests for the sake of any such gratification. We do not want mere show schools: we want real educating schools.

A Grammar School of five hundred, with the Primary Schools grouped around, which should be placed under the same head, is as large as is desirable for the proper supervision of one principal.

Evening Schools.—I feel constrained again to invite your attention to the subject of Evening Schools. This class of schools is designed for the instruction of such persons as have not acquired a competent education, and yet are unable to avail themselves of the advantages of the day schools. That there is a considerable number of persons of this description residing in this city, does not admit of question. We know, indeed, from reliable statistics, that the attendance at the Public and Private Schools is very large in proportion to the whole number of children of the proper school age. The proportion attending the Public Schools, we are proud to say, surpasses that of any other large city whatever. This fact stands out as the most gratifying distinction of our system of public instruction, and affords the best proof of its excellence and success. But we cannot say that we have reached the ideal standard at which we profess to aim. The essentials of such a standard are that the Public Schools should be good enough for all, free to all, and attended by all whose education is not otherwise sufficiently provided for. The fundamental idea of the American system of free schools, which had its origin on this very spot, is that it undertakes, at the public expense, to put the means of a competent education within the reach of everybody. We profess to have done just this thing, and in a certain sense our professions are in accordance with the facts, for we shut the doors of our schools against no child of the proper age who asks admission, all comers being welcome, and if indigent, supplied with the requisite books. But in another sense our profession is not justified by the facts of the case. Practically, we do not put the means of education within the reach of everybody who needs it. We do not provide the means of instruction for a class of persons from fourteen years of age and upwards, who are so situated that they cannot attend a day school, but could attend a school kept in the evening for a portion of the year.

The stork in the fable, that had his soup served in a plate, by the cunning fox who invited him to dinner, was practically not served at all, as his attenuated mandibles were not adapted to that mode of taking food. We cannot say, without qualification, that we have put the means of education within the reach of everybody, until we not only maintain schools enough, but schools kept open at the times and places which make them available. It is our great and just boast that we plant the Public School at the door of every child, but we cannot say that we actually furnish schools adapted to the wants of all. We admit that we are bound to provide for the proper education of all youth, but for the practical accomplishment of this object, it is necessary to make the schools accessible in respect to time as well as in respect to place. To determine whether education is in the reach of all, we must inquire not only where the schools are located, but also when they are kept open.

Some years ago, when this subject was under consideration, those who aimed to narrow the limits of public education, instead of enlarging them, objected that municipal corporations had no legal right to provide schools for teaching the elementary branches to pupils above fifteen years of age. This objection has been wholly removed by legislative enactment, (General Statutes, chapter 38, sections 7 and 8.)

This provision of the statutes makes the legal right of the city to establish evening schools for youth above fifteen years of age clear and indisputable, and the school committee are empowered to determine the branches of learning to be taught in them, without any limitation whatever. The real question, therefore, and the only question that can now be raised respecting the establishment and maintenance of schools, is the question of expediency. Here, possibly, there may be room for an honest difference of opinion. There are two considerations which seem to me to cover substantially the whole question of expediency. The first of these relates to the effect which evening schools would have on the day schools. If evening schools are opened, would not the cupidity of parents lead them to withdraw their children from the day school, and put them to work, leaving them to the evening school alone for their education? Possibly there might be the disposition to do this on the part of a depraved class of parents. But it is plain that this evil may be guarded against by proper regulations as to the conditions of admission, none under the age of fifteen being admitted, except in cases of pressing need. One of these extreme cases which came under my observation awhile ago, may be cited as an illustration. Here was a bright, active boy, thirteen years of age, the son of a poor widow. He was earning twelve dollars a week, which went to help his mother support the younger children of the family. His mother could not afford to give up this income and send him to the day school. She wanted a good free evening school for him. The boy seemed fully to

comprehend the situation, and he desired to continue his work, and eke out his education in an evening school; but in all this great city of schools there was no evening school suitable for that brave, bright boy. In other words, our system of education does not put the means of education practically within his reach. Now, we have among us a class of persons, including both children and adults, who, by reason of the poverty, cupidity, neglect, vice or crime of their parents, or from orphanage or other causes, have been, and are, deprived of the advantages of schooling. Our day schools, as now conducted, are not adapted to meet their wants. Unless some other instrumentality is employed, they cannot be reached. The question is, Shall this element of ignorance, with all its attendant train of evils, be permitted to exist and perpetuate itself, or shall it be cast out, and wholesome education substituted for it? And shall we hesitate to do this evident, tangible good, lest we may, by a bare possibility, diminish, in some small degree, the amount of good we are elsewhere accomplishing? For myself, I do not doubt that the benefits resulting from a judicious provision for evening schools would outweigh its necessary evils a hundred-fold. And this opinion is justified, I think, not only by the abstract consideration of the nature and probable operation of the proposed schools, but by the experiments already made in other cities. In a majority of the first-class cities of the country, evening schools have been in successful operation for a number of years. As to their utility, there seems to be no difference of opinion among the superintendents of schools who have observed their practical working.

I find nowhere any complaint against evening schools on the ground of their interference with the prosperity of the day schools. But I am willing to admit that where good evening schools are opened, a certain number of pupils, old enough to engage in some industrial occupation, would depend on these for finishing their schooling, rather than continue in the day schools. And I maintain that this result would not be undesirable,—that it might even be a positive advantage, as the few pupils who might feel obliged to adopt this course, under proper restrictions, might thus secure the education they need at less expense to them, and at the same time earn the means of their support, and contribute something to the productive industry of the community. The interests of the day schools do not, therefore, as it seems to me, stand in the way of evening schools.

The other consideration which concerns the question of establishing evening schools at the public expense, is the fact that several evening schools have been already provided by benevolent associations. These charity evening schools have been in operation for eight or ten years. I cheerfully admit they have done much good. The benevolent and public-spirited persons, by whose labors and contributions they have been established and maintained, are entitled to much credit. They have had ample time to

prove the capabilities of the charity system of supporting and conducting this class of schools, and now they themselves, certainly some of them who have labored longest in this enterprise, have come to the conclusion that they cannot accomplish all that is required, and that the time has arrived for municipal action. The charity system claims one and only one advantage over the public system as applied to evening schools, and that is the element of love and sympathy which the volunteer teachers bring to the work of instructing the peculiar class of pupils of which these schools are mainly composed. But experience has proved that the voluntary principle is wholly inadequate to meet all the wants of such evening schools as this community ought to provide. We need a system of classified evening schools of various grades, taught by teachers of experience and skill of a high order; such experience and skill as can be secured only by a proper compensation. Such a system we cannot expect to have, unless it is established and maintained at the public expense. Entertaining such views of this subject, it is my earnest hope that the board will, at an early day, take the necessary steps to organize and put in operation a system of evening schools, fully adequate to the educational wants of the city, which are not already supplied by existing institutions.—*Semi Annual Report, March, 1866.*

The Primary Schools have made commendable progress during the past year. In my visits to them, I have found gratifying evidence of improvement in methods of instruction and discipline.

I have witnessed with great satisfaction the progress which has been made in the methods of teaching in these schools. Not that I find every teacher enterprising and progressive. I regret to be obliged to admit that there are some—a small number I am willing to believe—who seem to be stationary, having, apparently, no disposition, if they have the capacity, to take a step forward, content with things as they are, disliking the very sound of the word “improvement,” and extremely anxious “to be let alone.” Such teachers have mistaken their calling; they lack the essential elements of success in teaching, and it would be no loss to the interests of education, if they were permitted to retire from the service, and engage in some more congenial occupation. But, leaving out of the account this small, exceptional class, and speaking of the teachers of this grade as a body, I feel sure that I do them no more than justice, when I say that they deserve high commendation for their conscientious and zealous efforts to meet all the reasonable demands of their arduous and responsible position. The merits of many of these faithful and devoted teachers cannot be too highly appreciated. Language is inadequate to express the delight with which I witness the all but miraculous results of their earnest and skilful efforts. In saying this, I say what I feel and know, and I say it because of my conviction that these good teachers—and I am speaking only of that class

—both deserve and need ten words of commendation, encouragement and appreciation to one of criticism and admonition.

Go with me into a school kept by one of these meritorious teachers. Observe the condition of the room,—its neatness, order and cleanliness; look into the happy faces of the pupils, reflecting the intelligence and love beaming from the countenance of their teacher. They have evidently come from homes of extreme poverty; but notice their tidiness, and especially the good condition of their heads and hands; and see their position in their seats,—neither stiff and restrained, nor careless and lounging, but easy and natural. The temperature, you will perceive, is what it should be, and the atmosphere uncommonly wholesome for a school-room,—no children roasting by stoves, or shivering in chilling drafts of air. What skill, and care, and patience, on the part of the teacher, have been employed to produce this state of things! Now witness the operations going on. The windows are opened more or less, according to the weather. The bell is struck, and the pupils are brought to their feet; they perform some brisk physical exercises with hands and arms, or march to music, or take a lively vocal drill, according to Professor Monroe's instructions. In five minutes the scene changes; the windows are closed, half the pupils take their slates with simultaneous movement, place them in position, and proceed to print, draw or write exactly what has been indicated and illustrated for them as a copy. The rest stand, ranged soldier-like, in a compact line, with book in hand, and take their reading lesson. Not one is listless or inattentive. Sometimes they read in turn, and sometimes they are called promiscuously, or they are permitted to volunteer; or the teacher reads a sentence or two, and the whole class read in concert after her; or they are allowed to read a paragraph silently. Now a hard word is spelled by sounds; then there is thrown in a little drill on inflection or emphasis. Many judicious questions are asked about the meaning of what is read, and all needful illustrations and explanations are given with such vivacity and clearness, that they are sure to be comprehended by every pupil, and remembered. The time for the lesson quickly glides away, every pupil wishing it would last longer. A stroke upon the bell brings the whole school to "position" in their seats; the slates are examined, and returned to their places; a general exercise on the tablets, or an object lesson follows. If the latter, perhaps it is on colors, the teacher having prepared for this purpose little square cards worked with bright-hued worsteds, or the children have brought bits of ribbon, or colored paper, or water-color paints,—very likely some one has brought a glass prism to show the colors of the rainbow. A verse or two of poetry on the rainbow is repeated. Now comes the music. A little girl takes the platform, and, with pointer in hand, conducts the exercise on Mr. Mason's charts. She asks about the staff, and notes, and bars, and clefs. They sing the scale by letters,

numbers and syllables; and close with a sweet song. They are next exercised on numbers, not in mere rote repetition of table, but by combinations with visible objects,—the ball-frame and marks on the blackboard, —writing figures on the slates being interspersed with oral instruction. And thus goes on the whole session. You would gladly remain the whole day, such is the order, harmony and cheerfulness of the school. You see that the children are both pleased and instructed, that they are wisely cared for in all respects. Neither body, mind nor heart is neglected. The teacher is happy. She is happy, because she is successful; and she is successful, because her heart is in her work. She has the right disposition and this qualification multiplies tenfold all others. This is no fancy sketch, nor is it a flattering picture of some single school. It is only an imperfect outline of what may be seen daily in not a few schools. When I contemplate the excellencies of these first-rate schools, I say to myself, all honor to the admirable teachers who have made them such!

But there is no place to stop in this work of improvement. We must not rest satisfied with what has been achieved. The best must be made better; not by harder work, but by more skilful work, by more wisely-directed effort, by the growth, development and perfecting of the art of instruction, based on the science of education. The poorest schools must not be allowed to remain poor schools, if teachers are to be had who will and can keep good schools. All the teachers must be paid well, furnished with all the needed appliances, and encouraged and advised; then, if they do not succeed in keeping good schools, they ought to retire, and make room for those who can.

The action of the board by which the city medals have been abolished, although not suggested by me, meets my hearty approval; and I earnestly hope that the Franklin medals and the present system of Grammar School diplomas will speedily share the same fate. Not that these medals and testimonials have been entirely useless, but that on the whole they are, in my judgment, the cause of more injury than benefit. In place of them, I should be glad to see a handsome and appropriate diploma awarded, with all reasonable ceremony and circumstance of honor, to every boy and girl who fairly passes through the prescribed course of study. I cannot doubt that this plan would work as well in the Grammar Schools as it does in the English High School, where it is accomplishing much good, without doing any appreciable harm.

Several years ago, a detailed programme of the instruction to be given in each class of the Primary Schools was adopted by the board. Already the beneficial results of this action are apparent. It is now high time to undertake the difficult but important task of preparing a programme of studies and exercises for each grade in the Grammar Schools. The present course of study, as prescribed in the regulations, is too general

and vague. As long as the course of study is so imperfectly indicated as at present, merely by naming the text-books to be used at the several stages, most teachers will feel obliged not only to confine themselves to the text-books, but to teach everything in them, or rather to require the pupils to learn everything in them. By this ill contrivance, the best teachers are hampered and cramped. They are constrained, against their better judgment, to teach many things which they deem useless, and to teach in a manner which they know is not the best manner. Some are driven by it to perpetrate the two grave educational offences of cramming and high pressure, which generally go hand in hand. A judicious programme would not only tend to remedy these evils, but it would advance the interests of these schools in various ways, and especially by securing a more equal and profitable distribution of the time of pupils and teachers among the required studies. Here is great room for improvement. Too much time is bestowed upon some branches,—those which are by the examinations made the test of the merits of the schools,—while others are slighted, to the great detriment of the pupils. Too much time is spent—wasted I am tempted to say—on spelling, in the upper classes. Why is this? Because they are almost always examined in this branch before the whole committee, and the per cent. of correct answers carefully noted, and not unfrequently compared with the results found in other schools. Suppose this misspent time were devoted to writing compositions, on the plan which has recently been brought before the teachers of the city by a professionally educated teacher who has bestowed great attention upon this subject, what a gain would be secured! We should then have, not only real practical spelling, but we should have along with it much of that kind of culture and education in which we are very generally deficient. A judicious programme would tend to promote similar improvements in the teaching of other branches.

The department of vocal gymnastics, in the skilful hands of Professor Monroe, has made signal progress during the past year. His well-directed efforts have been cordially seconded by most of the teachers, both in the Grammar and Primary Schools, and it is but just to state, that the measure of his success in each school has been determined by the degree of interest manifested by the teachers thereof. By teaching all the teachers in the Grammar and Primary Schools, he reaches all the pupils in those schools; and it is hoped that, before another year elapses, he will reach, either directly or indirectly, all the pupils in the High Schools. As it is the purpose of the committee on vocal gymnastics and military drill to present a full report on the operations of their department, it is not necessary for me to enlarge upon the subject at this time. I shall therefore content myself with the simple statement, that the results of the training in vocal gymnastics which has thus far been imparted, have been even more beneficial than I had expected; and that, in my judgment, the cost of time and

money, by which they have been secured, bears no sort of proportion to their value and importance.

The Training Department ought to be no longer considered an experiment, but an institution permanently established. Its influence on our Primary and Grammar Schools has been in a high degree beneficial. A great many of our teachers have visited it; and it is safe to say, that every good teacher who has spent a half a day there has gone away a better teacher. There are always a few teachers, among so many as we have, who are wholly destitute of the elements of progress, and such, of course, would not be benefited by visiting any school. It must not be expected that every graduate of this school will surpass the best of those who have not enjoyed its advantages; but I think I speak within the bounds of truth, when I say, that every one of its graduates appointed to a place in our schools is worth to the city a hundred per cent. more during the first year than the same person would have been, had she gone directly into the service without the training here afforded.

But however valuable this training may be, it would be found that the graduates of the Girls' High and Normal School will not avail themselves of its benefit, unless there is a pecuniary inducement to do so. The demand for teachers of ability is so much greater than the supply, that the most promising graduates are at once furnished with places to teach in our Primary or Grammar Schools, without being required to take the training course. The effect of this process is apparent. The Training School will not get the best material to work upon. It may be said that the best do not need it, but the fact is that the best pupils are more improved by the course than the second-rate pupils. As a remedy to this evil, would it not be well to provide that the teachers who pass through the Training School should have the maximum salary at once?

But while the school itself should not now be regarded as an experiment, its system and methods should by no means be considered as a finality. It must be progressive. As soon as it pretends to have reached perfection in theory and practice, it will cease to be a true Training School. The principal thing it has to do for its pupils is to stimulate them to inquiry and investigation; and it will cease to do this effectually, just as soon as it ceases to inquire into itself, in order to find out and remedy its defects.

Although the graduates of this school, as I have stated, are vastly better than they would have been without its training, my observation has led me to think that they would have been much more successful if more pains had been taken to teach them the art of governing along with the art of teaching, for these arts are probably nearly in an equal degree capable of being acquired in a Training School, and the latter is made available only through the former. I would therefore suggest, with some diffidence, that a part

of the time now devoted to natural history, should be given to the study of the subject of school government.

Perhaps the most important achievement of this school, thus far, is the demonstration it has made of what Primary pupils can accomplish without the evils of high pressure. It has shown that pupils may be prepared in the usual time to pass a most satisfactory examination for admission to the Grammar Schools, and at the same time acquire a large amount of knowledge and culture in addition, without any strain on their mental or physical powers. Not a few of our most intelligent citizens, having discovered the excellence of this system of training, have sought its advantages for their children.

The next step in this direction is to enlarge the scope of this school so as to include training for Grammar School teachers, or to establish a separate department for this purpose. We must aim to supply all our schools, of every grade, ultimately, with trained teachers. I believe the greatest evil of American schools at this time is to be found in the fact, that the teaching is done to so large an extent by novices, who have no distinct notion of what should be taught, or how to teach. Even here, with all our advantages many of our teachers enter the service without a competent knowledge of the work before them, and remain only long enough to serve an apprenticeship to the business, leaving just as they come to be really valuable; whereas they should begin with a knowledge of the business,—such a knowledge as only a Training School can furnish.

The following sketch of the course of instruction pursued in the Latin School, is taken from an admirable paper on the "Study of the Classic Languages," which was prepared by William R. Dimmock, Esq., an accomplished sub-master of the school, and read before the Massachusetts State Teachers' Association. From this statement it will be seen that the elementary English branches are properly attended to, and that the study of the French language is made very prominent during the greater part of the time allotted to the course :—

"Boys may be admitted to the school at the age of ten years. They are immediately placed upon Harkness's Latin Grammar, and the teachers labor constantly to so explain and illustrate the parts committed, that the committing to memory shall not be a mass of idealess words. So soon as they reach the paradigms of the first declension, the Latin Reader is commenced, and thenceforward they use the two books together. These constitute the only Latin of the year, a large proportion of the time being spent upon geography, arithmetic, reading, spelling, English grammar by comparison, penmanship and declamation.

"During the second year, these English studies are continued, and Viri Romæ and Nepos are read. Throughout the course of all the lower

classes, after they reach the later parts of the Latin Reader, one lesson a week is a written translation, treated, marked and ranked as a lesson in English composition. Ancient geography is also commenced with this year, and continued throughout the course.

"In the third year, the common English branches are continued, and much time is devoted to them. The study of French begins with the commencement of this year, and henceforward the pupils have in it two recitations per week to their ordinary instructors, and three exercises in pronouncing, reading and speaking French with a native French teacher, making, for their course, an aggregate of about eight hundred recitations and exercises in French. The only Latin of this year is Cæsar's Gallic War; but in this year the study of Greek is commenced with the use, as text-books, of Professor Sophocles' Grammar and Lessons.

"In the fourth year, reading, spelling, penmanship, arithmetic, geography, declamation and French are continued, and algebra is commenced. The Latin of this year is Andrews's Ovid, and a part of the *Æneid* of Virgil. As a preliminary to the study of Latin poetry, the pupils commit the prosody of their grammar, hitherto that of Andrews and Stoddard. The committing of the prosody usually occupies the highest division of a class from a week to ten days,—not more. The lower divisions ordinarily omit many of the exceptions learned by the first. As it takes so little time to commit the whole of the prosody used, and as scanning (except merely mechanically,) presupposes so much knowledge of quantity, we do not commence its application,—contrary to our ordinary rule in the study of grammar,—until all has been learned. Some classes have nominally spent three or four weeks upon prosody, by taking but three, four or five Latin lessons per week; but our usual mode is to devote about a week entirely to it.

"During this fourth year, Xenophon's *Anabasis* is commenced.

"In the fifth year, with the continuation of the same modern studies, the *Æneid* of Virgil is completed, and the *Eclogues* are read; and, perhaps, I may as well say here as anywhere, that one of the specialties of the school instruction is the derivation of words, and tracing their philological connection in the four languages studied, to which considerable time is devoted, and more so during this year, perhaps, than at any earlier period of the course.

"Arnold's Latin Composition is commenced in this year, and the fourth book of the *Anabasis* is finished.

"In the closing year, to the other English studies geometry is added, and also ancient history. The Latin of this year is comprised in ten Orationes of Cicero, in the *Georgics* of Virgil, and in Latin composition. The Greek consists of Greek composition, the last three books of the *Anabasis*, and the first three books of the *Iliad* of Homer. The members of the first class usually participate in a 'public debate' once in every five weeks."

Such is in the main the course prescribed by the school committee ; and which, as a whole, commends itself to our judgments and our experience. But we have, too, our express and our lightning trains. When Dr. Gardner became master of the school, anxious to reach the varied needs of those in the city who sought collegiate education, he added to our system what we term "Out of Course" Divisions, for those who, from their age at entrance, deem it unadvisable to spend so many years in their preparatory course ; and we aim to prepare these for admission to college as rapidly as their industry and attainments will allow. We think very much of the advantage of the study of language is lost by those who commence late, and are pushed forward so rapidly ; but, when it is needful or desired, they are fitted for the college examination as quickly as it is in our power, in four, three or two years ; and indeed in one or two special cases, young men have entered Harvard from us, after but one year's study of Latin and Greek. This very year two young men entered Cambridge very respectably, who, when they came to us one year and seven months before, had not opened the covers of a Latin or Greek book. Two others had been studying for but two school years. Their course was abbreviated to the mere standard of the Harvard entrance examination, and necessarily in knowledge they could by no means compare with their classmates upon the regular course ; nor do we think their knowledge will ever be as truly a part of themselves ; but, during this short time, besides learning the more essential portions of the Latin and Greek Grammars, they had read a part of the Latin Reader, Caesar's Gallic War, the whole of the *Æneid*, *Eclogues* and three books of the *Georgics*, ten *Orations* of Cicero, the *Anabasis* and three books of Homer.

"Other members of the same class had spent but three, and others four years in their preparation.

"Thus have I attempted briefly to describe the curriculum of the school, which we endeavor to adapt to the different wants of our more than three hundred pupils."—*Semi-Annual Report, September, 1866.*

Superintendent of Public Schools.—JOHN D. PHILBRICK.

CHELSEA.

Substitute Teachers.—A roll of substitute teachers, so called, is in the hands of the secretary of the board. This roll has been made up by examinations of candidates whose presumptive qualifications have been found sufficient to induce the test of the school-room. In case of a vacancy in any school, these substitutes have been employed to take temporary charge of the room for the purpose of testing their qualities and the probability of their success as teachers. Upon the resignation of a teacher, the substitute, if she be at first successful, is kept upon probation, under the rules, for a term of three months, when she becomes eligible as

a permanent instructor. This course has given to our schools during the present year, several teachers who are now earnestly at work, and are satisfying the committee. A large proportion of these substitute teachers is made up of the graduates of the High School, many of whom have pursued the full course of the school under the incentive of becoming teachers. They have been encouraged to this by the committee and by the principal of the High School, and have been pointed to the best works on the subject of teaching and its most skilful illustrators. We deem this course to be eminently just towards these young ladies, some of whom have proved creditable and skilful teachers. And we would still further encourage them, not only to study the best theories of educators, but to make frequent visits to the best schools, and to examine the methods of the best teachers, with the assurance that such visits will hereafter be taken as evidence of their earnestness and determination to become permanently engaged in the noble cause to which they seem devoted.

Primary Schools.—If there be one principle well established in education, it is this, that the greatest care and attention are due to Primary Schools, as giving the first mental impression and direction upon which all subsequent study and attainment are founded. What in our judgment is now most needed for the Primary Schools of this city, is the careful and steady supervision of one head. The work and attainment in them at present are as various as the schools themselves. The standard of one committee man differs from that of another, and while we have many unquestionable excellent Primaries, we must, for want of proper supervision, have many inferior ones. Here is an open and wide field for the labor of a superintendent of schools, and we are of the opinion that without such an officer, or without the work that such officer would perform, the Primary Schools will never reach the proper standard of efficiency.

For the Committee.—T. P. CREEVER.

WINTHROP.

We wish to call your particular attention to the importance of permanent teachers. There is a necessity, sometimes, of trying a new teacher, but of all changing of employees, the most needless, costly and fruitless is the practice of placing a new teacher annually in our school-houses.

When the teacher enters the school-room, every character and face, perhaps, is new, and he must know them intellectually and morally before he can successfully teach them. There are many ways of simplifying and illustrating each recitation, and he only who understands the character of his scholars can adapt these many ways to the great diversity of mind and character with which he has to deal. It is not the work of a day to be able to read the heart of a child and conform yourself to his understanding. The teacher must thoroughly understand his pupils before he can best

know how, in each case, to arouse the indolent, restrain the vicious, and with a love and sympathy for all, cause a flow of harmony to pervade the whole school. We dwell upon this point, and press it, and ask for its particular consideration, because it is a point of grave importance. In a mixed school like our Grammar, there will be inevitable disadvantage and loss in exchanging one good teacher for another even better, at the commencement of the winter term. These are the considerations which have influenced your committee in their selections of teachers the past year.

School Committee.—H. S. SOULE, LUCIUS FLOYD, CHARLES S. TEWKESBURY.

ESSEX COUNTY.

AMESBURY.

We would advise parents not to hurry children through their course of study at school, as the evil consequences thereof will surely be felt sooner or later. Time is lost rather than gained by this haste; for it is too often the case that young men and women have to learn over again what was hurriedly and imperfectly learned while at school, as soon as it is necessary practically to apply their knowledge to the business or duties of life.

We would also invite the attention of parents to the evil practice of sending children of too tender years to school. From five to fifteen is the standard age laid down by the Commonwealth of Massachusetts, yet it is our opinion that children under six years are far better off left to their plays than confined to a school-room. There are some precocious children of that age who will rapidly learn reading and the rudiments of knowledge, but even they, as well as those not so mature, derive such harm from the unnatural confinement of a school-room, and the tax imposed upon their undeveloped minds, as greatly to overbalance all that can be gained by them in mental development during that one year. The school-room is a punishment to them, and they are a punishment to the teacher, who can scarcely make their young minds understand that "Order is Heaven's first law." It is quite often the case, especially so in the more populated parts of our town, that the smallest children are sent to school because they are troublesome, while the older ones are kept out of it because they can be made useful at home. If, under such circumstances, our youth grow up in ignorance in spite of schools, it is not to be wondered at.

If parents would only attend to the physical development of their youngest children at home, or allow them to attend to it for themselves,

and send the older ones regularly to school, and induce them to use faithfully all the privileges prepared for their education, the good results of such a course would soon be manifest in our community.

In concluding our report, we beg leave to call your attention to the necessity, as it seems to us, of abolishing the existing district system. This system has had its day, and is now fast dying out from our communities. With us it has been, and still is, a serious injury, on account of the great difference in the number of scholars in the different districts. Thus in one we find 370, in another 13, in another 12, and in one only 4. By the statistics you will see that the average attendance is 89 per cent., consequently the number actually using the school privileges is in some of the districts exceedingly small; in one case being reduced to only one. Small schools are not nearly as interesting as larger ones; and though we do not complain of teachers who have taught these schools, yet we are convinced that their task would have been easier, and the results more satisfactory, if the schools had been larger. Moreover, while the apportionment of school money in the larger districts is hardly enough to pay the services of first class teachers for so long a term as seven, and ten months, according to the vote of the town, it is entirely insufficient in the smaller districts. Present circumstances therefore necessitate either a shorter term for our schools, or a lower grade of teachers, neither of which is admissible. Would it not be better therefore, to abolish districts, and establish schools wherever necessary, under efficient teachers?

School Committee.—JONES FRANKLE, G. W. NICHOLS, JONATHAN NAYTON.

ANDOVER.

In the appointment of teachers thus far, residence in town has been a leading recommendation after the question of qualification has been determined. It is, on the whole, the safer rule thus to secure the permanence of the teacher's relation, than to go abroad for better teachers, seeing that we are unable to enter the market and compete with other towns in the State. We thus dwell upon the importance of this permanence of the teacher's relations, because it is our experience that change is sure to entail on the school a loss of some weeks, if not of the whole first term of service of the new teacher; an evil which is so seldom remedied by any improvement that may be secured under the new teacher, as to make any change of doubtful utility, if it have simply for its object to attain such improvement.

The policy of the school district system is necessarily to declare and make vacant all the schools in town at the end of each term or year, and hire anew. Besides the distractions which the school committee would suffer if they should do this now, the evils which would arise from destroying all encouragement in the teachers to do their best that they may retain

the school which they have successfully taught, would prove fatal to any successful management of the charge committed to them. It is to be hoped, therefore, that the school committee will abide by the school regulations which they have made, and hire the teachers hereafter as is the usual custom under the municipal system, by the year, and keep them during the time that they shall serve satisfactorily to the committee.

If the young ladies of Andover, who look forward to serving as teachers in our Public Schools, would only strive to qualify themselves for the position with that thoroughness for which the State has made ample provision, there could never be any need, as in reality there is no desire, to go out of town for teachers.

School Committee.—BENJ. B. BABBITT, HENRY S. GREENE, SAMUEL H. BOUTWELL.

Course of Study in the Schools of Andover.

DIVISION.	First Term.	Second Term.	Third Term.
1st. . .	Alphabet and Primer.	Alphabet and Primer.	Alphabet and Primer.
2d, . {	First Reader. Eaton's Primary.*	First Reader. Eaton's Primary.*	First Reader. Eaton's Primary.*
3d, . {	Second Reader. Eaton's Primary. Primary Geography.*	Second Reader. Eaton's Primary. Primary Geography.*	Second Reader. Eaton's Primary. Primary Geography.*
4th, . {	Third Reader. Eaton's Intell. Arith., § 1. Introductory Geography.	Third Reader. Eaton's Intell. Arith., § 2. Introductory Geography.	Third Reader. Eaton's Intell., §§ 3 and 4. Introductory Geography.
5th, . {	Fourth Reader. Eaton's Intellectual Re- viewed. Introductory Geography. Grammar, lesson 26-40.†	Fourth Reader. Eaton's Intellectual, re- viewed to 5th sect. Introductory Geography. Grammar, lesson 41-46.†	Fourth Reader. Eaton's Intellectual, sect. on Written Arithmetic. Introductory Geography and Grammar, 47-56. †
Adv'n'd class, {	Fourth Reader. Common School Arith. Modern Geography. Grammar.	Fourth Reader. Common School Arith. Modern Geography. Grammar.	Fourth Reader. Common School Arith. Modern Geography. Grammar.

GRAMMAR SCHOOL.

1st, . {	Fourth Reader. Eaton's Intel. Eaton's Common School. Modern Geography. Grammar, with Parsing.	Fourth Reader. Eaton's Intel. Eaton's Common School. Modern Geography. Grammar, with Parsing.	Fourth Reader. Eaton's Intel. Eaton's Common School. Modern Geography. Grammar, with Parsing.
2d, . {	Fifth Reader. Eaton's Intel., to end. Eaton's Common School, to Involution. United States History. Grammar, Analysis, Pars- ing.‡	Fifth Reader. Eaton's Intel. Reviewed. Eaton's Common School. United States History. Grammar, Analysis and Parsing.‡	Fifth Reader. Eaton's Intel. reviewed. Eaton's Common School, to Involution. Modern Geography. Grammar, Analysis, Pars- ing.‡
Adv'n'd class, {	A thorough review of the studies of the Second Division of Grammar School.		

* At the discretion of the teacher.
† The lessons 1-25 are to be used as illustrations at the discretion of the teacher.
‡ The parsing is to be wholly confined to prose sentences.

HIGH SCHOOL.—*General Department.*

DIVISION.	First Term.	Second Term.	Third Term.
1st.	Arithmetic. Latin Lessons. English Grammar and Analysis.	Algebra. Latin Lessons. English Grammar and Analysis.	Algebra. Latin Reader. U. S. History.
2d.	Algebra. Latin Reader. General History.	Geometry. Cæsar. General History.	Geometry. Cæsar. Botany.
3d.	Geometry. Virgil. Natural Philosophy.	Trigonometry. Virgil. Natural Philosophy.	Rhetoric. Virgil or Surveying. Natural Philosophy.
4th.	Intellectual Philosophy. Chemistry. Astronomy.	Intellectual Philosophy. Chemistry. Astronomy.	Moral Philosophy and Evidences of Christianity. Constitution of the U. S. Review of the Course.

HIGH SCHOOL.—*Classical Department.*

The scholars in this Department finish the first two years of the General Department, after that the course for them will be as follows:—

3d.	Virgil. Latin Prosody. Kühner's Greek Grammar.	Virgil. Ancient Geography. Anabasis.	Virgil. Ancient History. Anabasis.
4th.	Cicero. Latin and Greek Compos'n. Anabasis.	Cicero. Latin and Greek Compos'n. Homer's Iliad.	Sallust. Latin and Greek Compos'n. Studies Reviewed.

BEVERLY.

Female Teachers.—Another measure adopted by the committee will, it is presumed, fail to be unanimously approved, in the lingering prejudice against the employment of female teachers for the winter schools. But it is no new conviction in our minds that has led to a conflict with the opinions of some, by whom our course in this respect is condemned, for we have long been convinced that in most of our schools it would be far better to continue the female teachers of the summer through the winter, than to put strangers in their places, whose only recommendation might be their sex, or their "brawn and sinew!" In former reports, especially in 1860 and '61, this plan was advocated in decided terms of condemnation as to the opposite plan. A better way was then recommended, which is now on trial. It is the present policy of the committee to secure permanency in the employment of teachers, by retaining those of known excellence through the year, and from year to year. We have no purpose to accomplish other than the good of the schools, and if the town is willing to furnish the means for employing male teachers in all the schools through the year, so as to have the same teachers in both the summer and winter schools, there is no objection on the part of the committee, though some of them, at least, would doubt the wisdom of paying more money for no

better service than could be obtained for less. The great point to be attained is, the supply of the schools with permanent teachers, either male or female. The change of teachers every term is a most serious hindrance to improvement, and our schools can never become what they ought to be, by having a male teacher for the winter months and a female for the summer. The remedy of an almost unparalleled evil in this direction may be found in the selection of suitable female teachers, to be retained in their places during the entire year. This has been the aim of the committee, under the full conviction that they could not better serve the town, than by instituting a reform in what is so obviously an evil.

Every year increases, not only the demand, but the supply, of well qualified female teachers. There is not now, as there once was, an insufficient number of suitable persons to furnish the schools generally with teachers of this class. To say nothing of the more than one hundred High Schools in the State, where many excellent female teachers are well educated every year, the several Normal Schools furnish annually about one hundred female graduates, many of whom have superior qualifications for this service. These professionally educated teachers, in most cases, are better prepared for teaching successfully than the male teachers usually employed, being specially trained for and devoted to this work, as is not the case with those who merely resort to teaching for a few months in a year in order to obtain the means for preparing themselves to enter some other calling. The difference is very great, where all the time, attention and energy, year after year, is directed to the single avocation of teaching, as in the case of hundreds of teachers who are graduating annually from the State Normal Schools. The male teachers, whom they might profitably displace, in not a few instances, are, it may be, young, venturesome college students, who do not intend to make teaching their business in life, and whose experience and education are much inferior to that of such females as can be obtained to take their places, and our schools would be great gainers by the exchange.

The strongest objection which can be urged against the employment of female teachers for the winter schools, is the assumed difficulty of governing the larger boys who attend more commonly in winter than in summer. But there is no such obstacle here, in nine cases out of ten, as is supposed to exist. The trouble is not so much with the larger boys as with the smaller, except in rare instances. Most female teachers can testify that the large boys are helps rather than hindrances to the maintenance of good order. When boys have seen more than thirteen or fourteen years, they have ordinarily reached a point of growing self-respect, and they are put more and more on their good behavior in the presence of cultivated females. They feel the power of female influence, and yield to the better impulses which it inspires as they would to no other restraints or con-

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nts. Those of whom this is not true are not the most hopeful
acted with our schools, and it cannot make much difference with
teacher they may have ; for one will do as well for them as an-
re being likely to do much for them. It can hardly be advised
oy male teachers simply for frightening small boys, or fighting
s, uncivilized or demoralized boys, the violent conquest of whom
re worth what it would cost to gain it by the employment of a
ner for that sole purpose. That male teachers would better suc-
inning the refractory than female teachers could, is not to be
d. Woman's power is the more gentle, but not the less efficient.
controls by love, rather than fear or force. In tact and aptness
rn and teach, she greatly excels. And at the same time, she is
ted to develop the manly qualities of the largest boys who mat-
d in the winter schools. All history since the days of knight-er-
rms this. No boy was ever made unmanly, or hindered from be-
nanly, by having a female teacher. The contrary is more true.
le teachers there is ordinarily found a superior power to at-
est in learning, and to secure improvement in manners, though
ols taught by them may contain boys of advanced years, and rud-
h exterior.

Chairman.—J. C. FOSTER.

BOXFORD.

We find almost all teachers have methods of teaching peculiar to
es. This is as it should be. Since none are precisely alike,
ner expect nor desire that all should pursue like methods in tea-
in some points, we think all should agree. For instance, all tea-
ld teach their pupils to think for themselves, to be self-reliant
dependent. We fear many do not feel the importance of this.
too much disposed to aid their pupils in their studies and recita-
question is proposed, and the scholar hesitates in his answer,
her at once gives him help, repeating some part of the answer for
iving some word, or hint, by which he may struggle through with
is practised by some teachers in almost every recitation. It
y, we think, is only evil. If a scholar has learned his lesson,
ld be able to answer all proper questions relating to it without
should he be credited with a good lesson unless he can do this. They
trained in school for the responsible duties of after life. They
have a teacher by their side to prompt them. They must, if
men in the true sense of the term, depend upon themselves, and
tice of constantly prompting boys and girls at school, may be
ns of forming them to habits of dependence, that will seriously
characters as men and women. While teachers should be re-

give all necessary instruction and aid, it should be done so that scholars must think for themselves, rather than that teachers think for them.

School Committee.—JOHN F. KIMBALL, ROSCOE W. GAGE, SAMUEL P. PRABODY.

BRADFORD.

The action of the town at the last annual meeting, in abolishing the school districts, enabled the committee to organize the schools on a different basis from that formerly existing.

At the commencement of the year, the committee organized a High School, open to all the town, adopting a four years' course of study, either as preparatory for college, or for the acquirement of a thorough English education.

A new school was organized, called the Intermediate School, which comprised the younger portion of the scholars from the former Grammar School, and the older from the Primary, and a system of gradation and classification was carried out in all the schools as far as practicable, and which was greatly in advance of any former year.

The school-year was made to consist of forty weeks, comprising three terms, two of fourteen and one of twelve weeks' duration; and it was arranged that all the schools in town should enjoy the same privileges, so far as the length of their terms is concerned, which was not the case under the district system in former years. It was thought advisable to establish a uniform rate of compensation for all the female teachers in town, which was accordingly done. It was our early care to secure good and practical teachers. We retained the services of three of the former teachers, and engaged two new ones. Thus was the work laid out for the year, and it is very gratifying to us to be able to say that our efforts have met with a good degree of success.

We have introduced, during the year, vocal music into all our schools as a daily exercise, to be conducted by the teachers as far as practicable and consistent with their other duties, and we believe that the past year has been one of more than ordinary success in all our schools. The system of gradation has awakened an interest in the minds of the pupils, their behavior in school has been better, and their attendance more constant and regular. We feel that we have had the co-operation of the parents and friends of the scholars, and that the efforts of the teachers have been seconded at home. Notwithstanding the success we are able to record, we see many errors and imperfections, which it is not necessary to enumerate, but which we hope to see removed and corrected in the future. And in conclusion, we would commend to the inhabitants of this town her Public Schools as worthy of the patronage of all, and of their liberal support.

School Committee.—H. E. CHADWICK, WM. COGSWELL, J. D. KINGSBURY.

DANVERS.

To secure good order and discipline, the efforts of the teacher need the sympathy and kind co-operation of parents. Children not reared under healthful discipline at home, have a natural tendency to rebel against the restraints of the school-room. To a great extent, the parent moulds the character and regulates the passions of the child. The mother's influence in this respect, can hardly be overrated. "The brightest and purest character of our nation's history, and which will grow brighter and brighter as time becomes more and more holy, as it goes sparkling down the stream of life, received the elements of his character from the vigilant guardianship, the sound judgment and spotless virtue of his widowed mother." Children taught respectful obedience and politeness to their parents, seldom complain of their teachers or give them unnecessary trouble.

Too many parents work against the best interests of their own children and those of their neighbors, by finding fault with the teacher in the presence of their children. Some, who seldom if ever visit the school, come to cheer the teacher's heart, and to encourage the pupils, are satisfied to gain their knowledge of things within the school, by questioning the teacher. A boy, whose disobedience has placed him in conflict with his teacher, on this *ex parte* evidence, the teacher is condemned, without opportunity for correction or explanation. It is easy to see that such a course does much to neutralize or destroy the exertions of the most useful teachers. Parents should be ready to approve, but slow to condemn.

A great change has occurred within half a century in the method of discipline. It has been discovered that the intellect can be led better than driven into knowledge. The ferule may still be required in the case of some unruly boys, though we say, "the less of it the better." The most efficient in securing order is one who has disciplined himself. His manner is calm and his tones subdued, so that a mere look or a motion of the finger is sometimes more effective than words. Such a teacher appeals not to the fear of punishment, but to the sense of duty, the love of knowledge, and the desire to excel.

Some of our schools have long labored under great disadvantage from the frequent changing of teachers. After weeks of earnest toil, a teacher succeeds in infusing life and interest into a school, only to give place to the succeeding term to another teacher, who allows the interest to be lost, the advantage to be lost. The scholars return to their idle or dissipated habits, and thus the money is worse than wasted. Some of our schools have retained their instructors for a series of years with manifest advantage.

By placing the matter of procuring teachers in the hands of the board of education, you have practically expressed your wishes in this

Although none of us covet the additional burden thereby imposed on us, we shall endeavor to fulfil the duty as best we may.

School Committee.—CHARLES F. HOLBROOK, CHARLES B. RICE, JOHN W. PORTER, RUFUS PUTNAM, A. S. HOWARD, ANDREW NICHOLS.

ESSEX.

Moral Instruction.—Although this part of a teacher's duty under the statute has been noticed in former reports, we nevertheless deem it important to bring it forward again. The neglect of moral culture as a part of school-training, is, in the first place, a violation of law, and if the neglect of moral culture were not so common, a given school, paying no attention to it, would probably be shut up as a nuisance. "It shall be the duty of all instructors of youth to exert their best endeavors to impress on the minds of children and youth committed to their care and instruction, the principles of piety and justice and a sacred regard to truth, universal benevolence, sobriety, industry and frugality,—not forgetting chastity or any of those virtues which are the ornaments of human society." We say if this statute were generally complied with, schools, not complying, would be closed as a nuisance. But the omission appears to be general, and the few teachers who comply are the exceptions. The principal objections to giving lessons on morals, manners and the virtues generally may be reduced to two. First,—teachers may say, there are no text-books provided by the committees for school use;—show us the books they would perhaps say, and make it a school study, and it shall have its proportion of time and attention. In answer to this it is freely admitted there are no school books specially prepared for the schools to our knowledge.* Perhaps the reason of this is, there is no demand,—a loud call from the people and school authorities, would set authors and publishers at work, at once.

There is far too much truth in Mr. Mann's idea, uttered in his first report, (1838,) that "the fact, that children have moral natures and social affections in the most rapid state of development, is scarcely recognized by teachers. One page," he continues, "of the daily manual teaches the power of the comma; another spelling, another accent, emphasis, &c., but the pages are missing which teach the laws of forbearance under injury; sympathy with misfortune; duties of stranger to stranger; to superiors, inferiors and equals. Hence young men spring up among us who startle at the mispronunciation of a word as though personally injured, but who can bear volleys of profanity unmoved."

But the main objection is one which we can best express, perhaps, in the words of the school committee of another town, South Reading,

* Since the above was written, we hear of Hall's *Manual of Morals for Schools*, but have not seen it.

mong many others. "There has been such a desire to exclude instruction from the school-room, that even moral instruction neglected, lest some should fear the latter would approach too former, or quite slide into it." And the Tewksbury committee on Arianism being proscribed by law, teachers are liable to go to the extreme, and teach nothing that is not of a literary character, except the virtues (above enumerated and all others required by law.) The committee in their school report, "may be enforced upon the able children, with all the strength of precept and example which possibly be brought to bear upon them without the least fear of sectarian, for all Christian denominations admit their importance and imitate their practice. A few minutes spent every few days in the importance of these virtues, might lay the foundation for a happy life. There is no danger of strowing the path of virtue with many flowers, or of hedging up the road of vice with too many trees."

School Committee.—DAVID CHOATE, EDWIN SARGENT, HERVEY BURNHAM.

GEORGETOWN.

In writing this report, it is our purpose to give a simple statement of the present condition of the schools, with statistics and suggestions that may be of common interest and benefit. In speaking of so many different schools, so similar in rank, and the of all so nearly equal, it is difficult to point out separate deficiencies and excellences without involving unpleasant remarks. We think, however, the present condition of our schools is flattering, and that we can chronicle a continued improvement. We believe that a candid and liberal understanding, on the part of our townsmen, of the claims and conditions of our Public Schools, is the surest and safest way to secure all necessary interest and support. And in this connection we feel constrained to say we should have, at least, thirty-six weeks of school in our District Schools. Our past experience teaches us that as the number we shall meet with an obstacle to the system and progress of our instruction, in the form of Private Schools. How then shall the evil be remedied? How shall an evil that has a direct tendency to weaken our whole school system be eradicated? We answer emphatically, by raising adequate means we shall supplant them.

It is gratifying to the committee to witness an apparent improvement in respect to average attendance. In 1863-4 the town stood 12th in the State and 6 in the county; while in 1864-5 it stood 88 in the State and 12 in the county. But while we exult at our elevation in the scale of attendance, we remember that the average attendance the past year was but about 75 per cent. of the whole number of scholars in the town. In

to see from this, that a portion of our youth from some cause are not receiving the benefits provided and designed for their best good. And we believe, and in fact know, that in many instances scholars absent themselves from school without the knowledge or consent of their parents.

How then shall such golden opportunities, such priceless blessings, be enjoyed by all and not a part of our children? By requiring and enforcing a constant attendance on the part of every child of suitable age within our limits. By adopting at each annual meeting the by-law respecting truants, which has already been approved by the supreme court. By choosing a board of truant officers, able and efficient men, who will execute the law; this, in our opinion, would be of untold value to the progress and welfare of our schools. Let us then, one and all, awaken in our interest, and with progression for our motto, let us extend a hearty co-operation to the means that shall make us an enlightened, temperate, and honored people.

School Committee.—J. P. JONES, JOS. EDMUND BAILEY, GORHAM D. TENNEY.

GLOUCESTER.

I wish to call the attention of the committee to what I deem the absolute necessity for a change or extension of the course in our High School for the benefit of that portion of the girls who design to teach. Twenty-six, or about one-half of the number of females now employed in our Public Schools, completed their education in this school, and several recent graduates are on the list of applicants for vacant places. I repeat in substance what I have before said, that while it is true that these young ladies obtain in our High School a really superior education, according to the general meaning of that word, it is also true that they go to the work of teaching without those qualifications which special study and preparation alone can give. It is too much to expect that they will go through the course at any of our Normal Schools with the view of teaching as assistants in our schools at the present rate of compensation, and I therefore recommend that a course of study be arranged in the High School, to occupy one year, which all future female graduates who propose to offer themselves as candidates for teaching in our Public Schools, shall be required to attend; and that this course be also open to other young ladies of the town, not less than seventeen years of age, who wish to become teachers and are otherwise qualified to avail themselves of this benefit. The studies of this class should be confined, of course, to the Common School branches, in which the pupils should receive thorough instruction, and be taught all that experience has proved useful in the different methods of imparting that instruction to the young. The teachers of the High School are fully competent to carry forward this work.

Both have learning, ability and experience ; and one, herself a graduate of the Salem Normal School, would be able to give the pupils the best of the training she there received. I commend this subject to the attention of the committee with the full conviction that in no way can the High School exercise a more beneficial influence than in furnishing yearly a few graduates specially prepared to become assistants in the Primary and Grammar Schools.

The scholars in our Grammar Schools commence the study of geography when they enter, and pursue it throughout the course. I expressed in my former report my dissatisfaction with the result of this five years' study, and subsequent reflection and experience have given me cause to change my opinion. I have long thought that constant drawing should be an essential feature in any good instruction in geography, and I therefore furnished to the teachers, at the beginning of the fall term, an outline of a course of study in this branch which required the scholars to have constant employment in this exercise. This outline was submitted to the members of our board and had their approval. It was intended only as a frame-work which the teachers themselves were expected to fill out and improve, and I am glad to say that I have seen abundant proof that they will cheerfully endeavor to carry out the plans which the committee may adopt to make this study more useful and interesting than it has yet been made in our Public Schools. In order to accomplish all we should aim at, much must be done by way of preparation. We should provide the teachers with such works as will be of use in improvements in teaching this branch, and they themselves must, by reading and thinking on all subjects connected with it, fit themselves to give that oral instruction which in so many various ways, in the pursuit of this study, may be made to attract the interest and therefore enlarge the knowledge of their pupils. Teachers generally have not acquired a thorough preparation to teach geography.

Another impression of mine with regard to the defects in our Grammar Schools, which I noticed in a former report, and which later experience has strengthened, is that which relates to the absence of all systematic instruction in the expression of thoughts by writing. I know no good reason why all the scholars should not have a regular exercise in this important branch of education. In the fifth classes it might be prepared on tablets and be confined to the writing of a single fact of some remote lesson, or a simple declaration of something thought or said or done. In the fourth the same way might be pursued, using pen, ink and paper, and in the third the exercise might be raised to the dignity of composition by writing, and thus be pursued to the end of the course. It has been customary for the teachers to require the scholars of the first class to write written abstracts of the history lesson, but this is not enough ; only

proportion of all who enter remain through the course, and we should try to do something, in this particular, for the lower classes. I hope, therefore, that the next board will give the subject their attention, and prescribe a regular course of exercises somewhat on the plan I have sketched out, or any other which may seem in their judgment better calculated to attain the desired object.

In this report I have refrained from speaking of the merits or defects of particular teachers, but in my visits to the schools I have not failed to applaud success, not merely as success, but as the result of wise and earnest efforts for improvement; nor have I failed, always I trust in the spirit of kindness, to bring to their notice whatever seemed to me defective in their methods of instruction. I will not say that a few changes might not advantageously be made, but, speaking of the whole body, it affords me pleasure to say that it exhibits many superior qualifications for the teacher's work, and fewer cases of incompetence than in any former period of our school history. All of them would be glad to have access to the best works on education, in order to learn the means by which the highest success has been attained in school government and instruction, but their salaries are not sufficient to give us any claim upon them for the expenditure necessary to obtain this benefit. Would it not therefore be a wise act for the town to make the small appropriation which would secure it? A resort to such aid would be of great service to the young and inexperienced teachers, and would compensate in some degree the want of special training with which they enter upon their work. I must, however, here repeat what I have already alluded to, the necessity for this special training. The place of assistant in a Primary or Grammar School is a place of no less importance than that of principal, and if our teachers must there commence their work, let us see to it that they do not any longer commence it without the qualifications to insure success.

Chairman.—JOHN J. BABSON.

GROVELAND.

But while the duty which we owe to the future is manifest, we owe a duty as plainly to ourselves. The welfare of society is largely dependent upon the proper training of the rising generation. Neglect this, and the moral securities of the community are shattered. Permit the young to grow up untrained, and society will speedily become disorganized and debased. There will cease to exist a respect for law, for age, for position, for the name and authority of the Supreme Being. Education may exist without moral principle. There are melancholy examples in the literary world, but these we believe to be the sad and painful exceptions. Other things being equal, we are confident that the educated man is the most

virtuous, honest and reverent. His mental culture reaches and molds his tastes, directs his employments, guides his thoughts. He finds companions in books. He communes with the minds of the great in all climes. He seeks amusement in the less exciting but more important occupations of life, and from day to day gains a discipline which improves him, and makes him more and more a man.

The education of the people, from the humblest to the highest, is a social and public necessity. Ignorance is the mother of vice and her votaries are those who are most easily led away by wily demagogues and artful conspirators. They readily become the base tools of men more wicked than themselves, and out of such material springs up a society which adds no strength to our social fabric; nay, on the other hand, creates a necessity for legislation and for labors of reform, which weakens than confirms the stability of our institutions.

Just in proportion as the common people are educated, are their civil and social rights, their personal and private liberties, safe. The history of nations, as well as that of individuals, proves this. Fifty years ago Prussia was a football for the nations of Europe. Wise and far-seeing men instituted a system of Common School education; seminaries were founded for the training of teachers at the expense of the State; laws were passed, compelling the attendance of the children upon the schools under severe penalties, and to-day Napoleon even bows at the feet of Prussia, and her voice is heard fixing the destinies of empires. Intelligence, breathing through a great nation, is mightier than arsenals and bayonets.

To render the means of education free, and hence open to all, Common Schools have been instituted throughout our State, and throughout our land. Their effect has been to elevate the character of society; to cultivate the minds of the people, and to raise up a growth of intelligence and manliness wherever their influence extended. To cultivate the mind, however, is not the only end of education. It is not enough to teach the principles of science as laid down in textbooks. This is cold and mechanical. It is the body without the spirit of instruction. But moral lessons should be as faithfully inculcated in the school-room as those which are simply intellectual; lessons of industry and reverence; lessons which will bear with emphasis upon the lives of the children who are taught, and make them, as they grow up, better men and women for themselves, also for society of which they must be members, and to which they must give a certain hue.

School Committee.—MARTIN S. HOWARD, JAMES L. WALKER.

HAVERHILL.

We report with pleasure a growing earnestness to interest the children in the objects that are constantly before them; those things which appeal to their senses and of which they are most curious to learn. It is refreshing to see a teacher stepping aside for awhile from the dreary, hum-drum of ordinary book teaching, and infusing into her school the fulness of a soul made earnest and aspiring by a right conception of the object of study. A child that can learn the multiplication table can also be taught the distinguishing features of the different shade-trees in our streets, or the habits of the birds that sing about the door, or the colors of the flowers. When teachers complain that they cannot interest their scholars, or keep them still, unless they are poring over some stupid book, we suspect a radical defect in their idea of the work, and care not how soon they seek some more congenial vocation. During a casual visit to one of our Primaries, the word "orange" occurred in the spelling-lesson of a class of little beginners. This gave rise to a pleasant talk about the orange. Where it grows, in what climate, when gathered, how packed, by what means sent to us, etc., the teacher, by a happy blending of question and narrative, succeeding to absorb the attention of each child, and, at the same time, giving wholesome instruction. In another school, the poplar-tree was mentioned, which led to a talk about trees. How the poplar differs from the elm—which is more beautiful, which more useful. To the question, "What does a poplar look like?" one little fellow answered, "Like a shut up umbrella!" "How many scholars saw the sunset last evening?" asked a teacher in another Primary. Twenty little hands were up at once. "How many think it was beautiful?" The same number of hands up again. "What made it beautiful?" Only one timid hand up, that of a little girl, who answers, "The pretty colors." "What were some of the colors?" This gave rise to a variety of answers, "red," "yellow," "blue," "purple," and one sober little fellow said "green." This answer caused a little merriment among the rest of the children, but the teacher explained that the sober boy had made the best use of his eyes, for green tints were often seen in sunset clouds by sharp eyes. These are but illustrations of the methods adopted by teachers, who are awake to the wealth of beauty and wisdom that lies everywhere around us. It is also noticed that the scholars of such teachers never fall a whit behind in the "three R's," when examined for promotion. We hope the day is not far distant, when all our Primaries will be rendered attractive by such teaching, and when no teacher will feel obliged to resort to blows to induce a child to "study."

Chairman.—J. CROWELL.

LAWRENCE.

The Free Evening School.—This school continues under the management of the Rev. George P. Wilson, City Missionary, as faithful corps of teachers, most of whom are graduates or former of the Lawrence Public Schools.

Mr. Wilson takes charge of this school as a portion of his work, and receives no additional compensation for his service. Teachers receive a small compensation for their aid.

The school commenced a month earlier than usual this year, and has two evenings in the week.

The average number present for the two months now passed, has been three hundred and fifty. Each room has been crowded in evening. Among the scholars are forty-three French, nineteen German, and twenty-five colored, men and women. The first two classes come to learn and speak in the English language. The latter class, most of whom were slaves, commenced with the alphabet, show a commendable interest in their studies, and are making rapid progress.

Every facility that circumstances will allow should be given to those who desire it to become better educated than they are, and as this school furnishes so good an opportunity for this purpose, we hope for our laboring people whose early advantages have been limited, that those over fifteen years of age, will as far as in their power avail themselves of its advantages, and do the best they can to put themselves at least on a level with those under this age who now attend the public day schools, only so much as the law requires.

Superintendent.—G. E. HOOD.

LYNN.

If there is danger of underrating the importance of any particular educational course, it is likely to occur in relation to the estimation of the relative value of our Primaries. The constant habit of calling these schools "little," "lower," and similar terms, leads to an acquisition of ideas unfavorable to a proper conception of the real value of the school system. They are little only as the scholars are small, and lower in nothing except the rudimentary character of the instruction.

The first contact of the child with the school is an interesting one in its history, and the impressions made, favorable or otherwise, may have a permanent character as to influence much the desire for learning, and success in attaining it; hence the constitution, character, reputation, and method of conducting these schools should engage the most careful

tion of those having charge, either as teachers or members of school committees.

It is evident that they should differ considerably in the manner of their conduct from schools where the pupils are of more mature age. The same degree of rigor and immovability which would be attainable, and perhaps desirable, in some places, would be either impossible or cruel in a Sub-Primary. Not that order and discipline are out of place, but they should be of a different kind, and adapted to the age and intellectual condition of the scholars. The control on the part of the teacher should indeed be as complete and thorough as in any school, but exercised with careful regard to the mental capacity and physical wants of the scholars. All the exercises should be short, as also the intervals between them. The desire for change and motion should be indulged by means of general exercises thrown in between the recitation of lessons, such as marching about the room, keeping time by the singing of some familiar tune, or calisthenics of such character as will prove a real exercise, without being so intricate as to prevent their being easily learned. The lessons required should not be too exclusively from the book, but letters upon blocks and cards, printing and drawing upon the slate and blackboard, in short, every device for varying the routine and avoiding monotony will be resorted to by the teacher who desires to attain eminence in this department of instruction. During the intervals between the recitations, a few playthings in the hands of small scholars will serve to dispel languor and weariness, keep them more quiet, orderly and contented, and render school more pleasant than if left without anything to engage their attention.

The position of teacher should not be considered as temporary,—a stepping-stone to some other place,—but should be held as honorable and desirable as that of any other position. The remuneration is very properly the same, and the qualifications required for the highest success in the management of a Sub-Primary School are not; we are safe in saying, among the most prominent traits of all those who press their claims upon the committee for positions as teachers.

The action of one of our Sub-Primary teachers in ward three in declining, some time since, the invitation of the committee to take charge of an upper grade Primary, for the reason that she was better satisfied to remain where she could work to the best advantage, was honorable to herself, and well explains the remarkable success she has achieved in the management of a school which is allowed to be one of the very best in the city. There are other teachers of this class who love their schools, and are contented to remain in them; and their interest finds its sure reward in the success of their schools, and in the approbation of the friends of education.

A Primary School, and especially a Sub-Primary, may be more moulded by the teacher than one of more advanced grade. It may be languid and sleepy, almost to absolute stupidity, or it may be full of energy, vivacity and hearty interest. Children are naturally lively and their disposition should not be repressed, but directed. They are curious and anxious to learn about everything that comes in their way, and their eagerness, not to say of regret and mortification, that this irrepressible trait should be made of so little use in the actual business of teaching. The fact is, there is too much of the book in these schools. There are too few things to look at, handle and talk about. There is too great an amount of arbitrary training, and too little earnest, sympathetic contact of the teacher and children. More oral instruction is wanted, more conversational methods, more pictures and playthings, more music, more freedom and fun; and all this we hold may be attained without the loss of that respect and regard for authority which children in school should be expected to observe toward their teacher. The discipline and control should be that of a well regulated family, where the basis of obedience is a hearty esteem and mutual affection. If it is said that education is really a matter of toil and labor, and not something to which the child may be entrapped without knowing it is anything but play, it may be said in reply, that even labor is comparatively pleasant when the end of it is well understood and the result apparent. Independent of this view it is evident that of different methods of acquiring information some are easier and better than others. If a father desirous of teaching his son the names of the different individuals in the same neighborhood with himself should make a catalogue of the whole, and require the boy to commit them all to memory before he could see one of the persons to whom the names belonged, the process would be analogous to the method of teaching arbitrary definitions, and symbols, before a single intelligible idea can be attached to them. On the other hand, by a more natural method, the child, seeing a new face in the street, asks, "Who's that?" The answer forms part of the boy's knowledge, and in about every case is acquired without any great labor, and comes soon enough for all the practical purposes of life.

We would not be considered as advocating any loose or trivial management of schools, well knowing that almost every result in life is obtained by patient and persistent application; but we believe that too much of what is called teaching consists in burdening the memory of scholars with wordy definitions and rules before the ideas which they are founded on are at all understood.

"Three-quarters of the boys graduate from the Grammar School," said a teacher recently, and statistics would probably more than confirm the truth of the remark. It thus becomes an important question if

doing for these boys all they should accomplish. There is enough of arithmetic, to be sure, if taught with any success, to enable the most ambitious to perform the computations required by any reasonable or probable accumulation of dollars, but there are other things essential to success in the various pursuits of life, the necessity of which should not be overlooked. To a boy, for instance, who expects to learn a trade, and is to come in daily contact with the material substances of the universe, which he is expected to mould, fashion and apply to useful purpose, the properties of matter, its various relations and modifications, the laws which govern it in motion or at rest, are of more consequence than the rules of arithmetic, which relate mainly to commercial matters, as interest, bank-discount and foreign exchange. The immense amount of time, thought, money, and even inventive genius, which has been expended in the pursuit of that mechanical delusion commonly known as "perpetual motion," has happened from ignorance of a few simple natural laws, neither difficult of comprehension nor requiring long time to master; and as that is the best education, which most perfectly fits its subjects for the actual conditions of life, we believe that our system may be materially improved by more thoroughly adapting our Grammar Schools to the wants of those whose opportunities for instruction terminate upon their leaving it. This could be accomplished, in part, at least, by adding to the present studies the elements of mechanical philosophy, the rudiments of geometry, and so much of book-keeping as will suffice for the purpose of making an intelligible record of any ordinary business transaction. With regard to the latter study, perhaps some attention is incidentally paid to it, though not included in the regular list of studies.

If it is objected that the pursuit of these branches of education will require more time, we answer that more time may be profitably spent in the Grammar Schools, and if anything can be done to induce scholars to remain longer, it will be better for themselves and the reputation of the schools.

The disposition to crowd forward, shown in every course of school instruction, has a pernicious tendency; for solid acquisitions in learning are attained by thorough preparation in the rudiments of every branch, and it is a most mistaken notion that promotion in school is in all cases equivalent to real advancement in education.

Dull Scholars.—Every school has its dull scholars,—the clog, it is thought, in the way of rapid progress, the plague and vexation of teachers. This is one of the inevitable drawbacks to the comfort of teaching, and should be accepted as such, and consequently borne with patience. "How pleasant my school would be were it not for the backward scholars," says one, and as much could be said of any vocation in life, were all the unpleasant features eliminated. But it should be considered that these

low learners are not all of one class, and may therefore require different treatment. The indifferent and lazy will tax not only the patience but the ingenuity of the teacher in devising means for arousing in them active interest in the duties of the school, or in apportioning punishment when the neglect amounts to criminality. Some are constitutional dullards and lacking in self-confidence. These should be encouraged by proper means, and, especially where the behavior is generally good, sarcasm and scolding will prove worse than useless.

Some children, not deficient in vivacity and smartness, find difficulty in committing a lesson to memory, and, although capacity is usually equal to what is called scholarship, the rule will not always hold good. It is only necessary to consider the various channels of thought and the effort which lie outside of the ordinary school text-books to show that it is unsafe to decide at once that a boy will "never make anything." He does not take readily to the rules of arithmetic and grammar, but the world's history furnishes so many examples of dull scholars, called such, who have achieved eminence in special departments. That we should hesitate before passing severe judgment on those who have not developed any particular bias or inclination in the school. A dull scholar may prove to be the dexterous mechanic, artist, engineer, or inventor. He may turn out to be the practical business man, capable of organizing labor, controlling capital, and developing the wealth and resources of a community. There are doubtless men in active life who are benefiting society by their enterprise, sagacity and business ability, who, perhaps, made no great show at recitation, and consequently were rated as dull scholars.

But there is another thing which sometimes stands in the way of the rapid progress of the scholar, which, in itself, is to be commended. Perhaps the most of scholars, are ready to take the statement of their text-book on trust, and to work by means of rules of which they know nothing; but not so with others, who apply their reasoning to everything they are required to learn, and with curious interest examine themselves to examine the hidden relations upon which accurate result depends. The question with them is not alone as regards the fact, but why it is so. Such scholars hitch and bother at everything, not satisfied with learning dry and abstract rules without understanding their application and bearing upon the subject they have in hand. A thoughtful person in the habit of attending school examinations is not difficult to avoid the suspicion that the recitations are in too great degree mechanical, and that the memory is the principal mental faculty brought into play during the process. Teachers are not alone to blame for this, for they say to the committee, "You require us to go over sections or pages of the book, and with the number of classes and

on our hands the most we can do is to teach dogmatically, requiring the lessons to be committed to memory, and recited with as much incidental illustration as we can find time for." Parents, on examination days, expect to hear smart recitations, and thus teachers, committees and parents are alike in fault, losing sight of the importance of thorough elementary instruction, and depending too much on mechanical expertness in reciting what is in the book, but which is apt to prove insufficient when applied to the practical concerns of life.

Chairman.—STEPHEN D. POOLE.

LYNNFIELD.

Your committee on former occasions have expressed a belief that there should be a different course pursued in relation to the instruction given in the Common Schools, and especially so when it is considered that to most of the scholars it is the only public instruction they receive. After being well grounded in the elementary principles of learning taught—orthography, reading, writing and arithmetic—instead of spending so much of their time in studying and reciting *verbatim* from text-books much that can have no practical bearing on their calling in after life, and much of which is soon forgotten after their school days, would it not be better, nay, should it not be considered indispensable, that every child should be so far initiated into a knowledge of those physical laws, upon a due observance of which life and health absolutely depend?

They should understand the nature of the air they breathe, its composition, the nature of water, and its relation to all life. They should have a knowledge of the chemical composition of their own bodies, and their relation to the elements by which they are surrounded. They would thus learn that more than one-half of the weight of their own bodies is composed of that inviaible gas of the atmosphere, oxygen, which they are constantly breathing. They would also learn the remarkable and never-to-be-forgotten fact, that the water which they daily drink is composed of eight parts in nine, by weight, of the same gas, of which, in a large proportion, their bodies are constructed. When, therefore, they partake of this element, they drink in life itself. Were these natural laws, bearing upon life and health, taught in the Common Schools, and made to be fully understood by the pupils, they would not dare to trifle with their vital interests in subsequent life; and society, in a great measure, might hope to be relieved of the sight of those unfortunate subjects of intemperance towards whom Death points his awful finger as his early victims. It should be the object of education, not only to prepare children and youth for the discharge of the duties of life, but to inspire them to have some laudable object of pursuit in view, to which their attention should be constantly directed, and

which would render such valuable members of society; otherwise they may live from day to day and year to year in a state of stupid inaction in what may be worse, and life become a failure. This is but too common a case, under all the efforts made for human progress.

Corporeal Punishment.—It has always been the desire of your committee that the schools should be governed by moral and persuasive means, and this can usually be done by well-qualified and efficient teachers, and scholars have had proper parental training. This subject has recently attracted attention in some places, and many persons have looked upon corporeal punishment as a means of school government not to be abandoned.

Order, quietness and cheerful submission to the constituted authorities in the school-room, is an indispensable requisite to successful teaching. Every necessary means should be used for this purpose. In all communities there are some untractable scholars, unfortunate in their parental relations, and growing up without restraint, who cannot be governed by ordinary means.

It should always be borne in mind in the education of children that their animal nature comes into action first. Mere animal instinct is the governing motive of their early years, and if kindly but firmly controlled, and disciplined then, they will usually become good and obedient children in after years, when their intellectual and moral natures become developed. Two of your committee, at least, know from personal experience that cases may arise, after years of school government by ordinary means, when physical correction alone could subdue. We have therefore allowed teachers to use their judgment in this respect.

Your committee have no sympathy with that mawkish sentimentality that would allow a vicious and stubborn scholar to destroy the usefulness of a school, rather than apply this potent remedy. They trust also, in relation to this subject they have some regard to the teachings of the Bible.

School Committee.—J. NEWHALL, HENRY E. SMITH, M. B. BOARDMAN.

MARBLEHEAD.

The education must conform to the nature of man, his relations and responsibilities; and must embrace the whole man so as to preserve the relations and proportions of the intellectual and the moral and physical powers, as established by the Creator. These two classes of powers are mutually dependent and influential, and by being fostered side by side as parts of a perfect whole, a character will be formed beautiful in its proportions, strong and massive, corresponding to Anthony's description of Brutus :—

"His life was gentle, and the elements
So mixed in him, that *Nature* might stand up,
And say to all the world, *This was a man!*"

Great mistakes have been made on this subject which have been disastrous alike to the individual and to society. The peculiar danger to which our age is exposed is the tendency to the exclusive development of mental vigor and activity. The tide from the schools sets strongly in this direction. So that while we have made a great advance in substituting an intellectual for a physical supremacy,—when a man is no longer regarded as "great because he can lift up an axe among the thick trees," we are in great danger of losing sight of the moral and the spiritual. We seem to forget that the intellectual in man is not so far above the material as the moral and spiritual is above the intellectual,—that if our subjection to matter is a degradation, the subordination of the moral to the intellectual is also a degradation. Hence while great pains are taken to educate the child in the first principles of letters and science, and in regard to the business of life, the culture of the heart and conscience is often sadly neglected. The child grows up a shrewd, intelligent and influential man, a power in community, but a power for evil not for good, because a slave to his lower propensities. Talent and knowledge are never blessings either to man or to society unless they are under the control of virtue and religion. Far better that men should remain in ignorance than that they should acquire knowledge only to be made the more subtle and powerful enemies of God and their fellow men. While, therefore, our children need an intellectual culture which shall give them knowledge, and wisdom and mental vigor, they need also a moral and religious education, that their wisdom and knowledge, and mental activity may be properly directed and controlled. Moral motives and restraints, always necessary in every form of social life, are with us, in this land and this age, of the first importance. Once dissolve those moral ties which spring out of our responsibility to God, and those of a political nature and all others would be as powerless to secure the faithful discharge of our duties to society, as the cords of the Philistines were to restrain Samson. The only security for property, for reputation, for liberty, for life, is founded in the sense of religious obligation.

Vocal music has been practised in most of our schools for a long time with the most favorable results, and your committee being deeply impressed with its importance as a branch of education would rejoice to see it installed as a permanent thing in them all, and to have in those where it could be properly used, a suitable instrument as a part of the furniture to aid in this delightful and influential exercise. An art by which so much can be done to soften the asperities of the temper, to cheer the heart, to elevate and refine the taste, and to bring the faculties into a condition favorable to their

est action,—which adds so much to the warmth of devotion and amusement at once innocent and elevating, must act with great power upon the susceptible mind and heart of childhood, and exert a most beneficial influence upon the formation of youthful character. Such an education deserves the attention and commendation of all educators of the youth. It should be cultivated in every school. Every child should be taught singing.

Music is, moreover, one of the most important and influential agents in moral education. It not only elevates and refines the taste, it soothes and refines the soul. Begun in early childhood, it will be a source of enjoyment, and a shield against those temptations which lead so many boys and men down to degradation and ruin. And since we need in this corrupt age, every effectual guard that can be placed around our youth. Every nature needs amusement and excitement, and we must not supply our youth with those that are pure and elevating, but must resort to those furnished by others which are polluting and destructive. We cultivate in our children, through the art of music, a taste for pure amusements that are refined and elevated, the tendency will be to disgust for everything which is profane and polluting—for those dissipated pleasures and indulgences, as the intoxicating cup, the gaming table, the graceful and licentious exhibitions of the stage, and the beastly revels of the club room and the street which are multiplied by a vulgar civilization and which, while they inflame their lower passions, steel the youth against all the holiest influences of virtuous homes, of truth, of piety and of religion.

From the earliest ages music has ever been regarded as the best means of moral and social purity and refinement; as mightily contributing to refine the taste and to strengthen the moral feeling. Music is the language of the heart, and so universal is the disposition to resort to it to express their own hallowed emotions or awaken those of others, that Shakespeare, that great master in the science of the heart declares, that —

"The man that hath no music in himself,
Nor is not moved with concord of sweet sounds,
Is fit for treasons, stratagems, and spoils;
The motions of his spirit are dull as night,
And his affections dark as Erebus;
Let no such man be trusted."

In the education of our children, therefore, we should teach them to love and cultivate in them the love of music, for the highest welfare of the nation as well as for their own good. To do this is true political economy. It is a better pay for music teachers and instruments as means for the promotion of a true civilization, than for prisons and police officers.

School Committee.—BENJ. R. ALLEN, WM. B. BROWN, BENJAMIN P. WARE, J. SANBORN, STEPHEN HATHAWAY, Jr., THOMAS FOSS, STEPH. P. HATHAWAY,

METHUEN.

The design of the Public School is to give every child a practical education. And if the children are obliged to leave school at the age of fifteen years, they should have a general knowledge of the studies pursued there. They should be able to read well, to write a neat, well-spelled letter, should have a general knowledge of the geography of the world, should be familiar with the principal events in the history of the United States, at least, and should have a practical knowledge of grammar, arithmetic and physiology. But how much knowledge of real value do they possess of these studies? Probably more than half the time is devoted to that great hobby of New England schools, arithmetic; while the remaining time is given to the eight or ten other studies usually found in our District Schools. The best classes are the arithmetic classes, and the reputation of the teacher, and of the whole school, not unfrequently rests on the feats performed by the first class in arithmetic on the day of public examination. Woe to the teacher who has not a first class in arithmetic. Arithmetic should receive its appropriate attention, but it should not take the time of other equally important studies.

If the great problem of life could be solved by any arithmetical process, if children had no other faculties than those of calculation that need to be exercised, then "the science of numbers and the art of computing by them," might properly receive a large portion of the pupil's time. But is it not quite as important that a child's moral and perceptive faculties should be developed as his reasoning? Does not his usefulness, his happiness and his success in life, depend quite as much upon the right training of the former as of the latter? If so, then ought not a change to be made? That course of instruction that will impart the greatest amount of useful information, and best fit the children for the duties of life, is the course that should be adopted by every teacher.

School Committee.—S. G. SARGENT, KING S. HALL, J. S. HOW.

NEWBURYPORT.

Primary Schools.—The importance of the Primary Schools cannot be overrated. They form the basis of our educational system. Here the child must learn what a school is—how to behave, and how to study when in school. The work well done here will never be lost in subsequent life. On the contrary, if bad habits be established, a wrong direction be given to the mind, it must be followed by injurious consequences that will be lasting. In the words of another—"The teacher of the Primary School sweetens or embitters the water at the fountain. An infusion which would

poison the heart and life of a child, might be poured into a man's harm."

We fear we have fallen into the too common but injurious error of supposing that any young lady, with a fair knowledge of the rudiments of an education, is qualified to teach a Primary School, because it is a school of little children. But there is no stage in the pupil's course in our schools, that requires more skill, practical wisdom, forbearance, firmness, and patient, plodding diligence, on the part of the teacher than the Primary School. Hence no person who has not a well-disciplined mind and heart, a good knowledge of human nature, combined with a willingness to teach, ought to be placed in charge of little children. The most important instruction given is not in book-knowledge; but in behavior, and impulse to the opening of the mind. If we be obliged to submit to the misfortune of employing second-rate teachers in our schools, let them by all means have charge of our High or Grammar Schools.

Female High School.—This school was without a principal at the beginning of the year. It was committed to the charge of a tried and efficient first assistant, Miss S. A. Green. Meanwhile the question of uniting the two High Schools was agitated. The committee were of the opinion that could such a union be formed it would be a great benefit. The experience of other places where the sexes are together, the testimony of leading educators in the State, the testimony of those who formerly opposed to such union had watched the results where it had been tried, summarized, the testimony of teachers who had taught in schools of both kinds, all favored such a union. It was testified that better order was attained, that discipline was more easily secured, that the sexes exercised a wholesome restraint on each other, that the boys were more manly, the misses more womanly, that there was a healthy stimulus from each to the other, that the mutual influence was good and helpful, especially during that period of life when manners are being formed, and when manly power and womanly reserve and delicacy are being developed.

The evil effects which opponents of the measure predict, are not borne out in experience. The same objections which would forbid the union of the two sexes in our schools, would be valid against the same union in the family; for those who attend the schools are children of the same kind of like families.

As we consider it a misfortune for a family of children to be divided into the two elements in the family training, so it is believed it is a misfortune to keep them apart in the school education. They may be mutually helpful in the school as the family.

School Committee.—JOHN E. THURSTON, ISAAC P. NOYES, JOHN PEARSON, PETTINGELL, JR., AMOS W. MOONEY, THOMAS BORDEN, JAMES W. CHENEY, COUCH, EDWARD S. MORELEY, N. A. MOULTON, WM. J. CURRIER, WILLIAM PL

ROCKPORT.

The boy or man who does not know how to submit to wholesome laws can never be a good citizen. Obedience to law lies at the foundation of all good character and all true prosperity. This should be required and rendered in the school-room. Children that have been taught the lesson of obedience at home are generally prepared to become good members of school. It is necessary that children should be taught at home, that obedience to teachers and a strict compliance with all the regulations of the school are duties which must not be neglected, and children should be sent to school instructed by their parents to be obedient. To attain this end, the committee have adopted a particular regulation, which they believe has already produced good results. It is substantially as follows:

“If any scholar shall interfere with, or in any manner resist the acts or authority of the teachers in efforts to enforce necessary discipline, or shall wilfully disobey the orders of the teachers, or in any way encourage disobedience to orders in others, he may, in the discretion of the teacher, be summarily suspended from school, and not allowed to return without permission obtained from the committee.”

Early in the year, the attention of the committee was called to the state of the reading exercise in our schools, and efforts were immediately made to improve this interesting and important branch of education. Of the various branches taught in our Common Schools, there is none more important and none more neglected than reading. Good reading is the foundation of all learning. Hence its great importance to every scholar and to every person. The art of reading has not hitherto been taught in our schools to any considerable extent, as have other branches of education. Scholars have been allowed to go on with this exercise as though it was one of little or no importance. This is not as it should be. To read well, scholars should understand what they read; and if they cannot with the means they command, it is the teacher's duty to make it plain to them.

At the teachers' meetings which have been held occasionally during the year, for the purpose of considering questions relating to the good of our schools, it was recommended by the committee that efforts be made by the teachers to improve the reading exercise in our schools; and we are pleased to say that the recommendation was seconded, on the part of most of the teachers, by prompt and energetic efforts, which resulted in a marked improvement in this branch of education.

School Committee.—N. F. S. YORK, ANDREW F. CLARK, DANIEL WHEELER.

SALEM.

Nothing in the range of intellectual culture is more to be desired than a taste for the study of nature, and a habit of quick, large and intelligent

bservation in her domain. It is as healthful to the moral as to the actual part of us. It will be a matter for life-long rejoicing to our children and to their parents, if they can be early imbued with a love of study of physical science and natural history. It will be a positive gain to the good knowledge of which it will put them in possession; a gain in that, by giving the earliest start and first love to pursuits having a pure and wholesome influence, it will protect against the counter-influences and passions which so much beset and mislead the young in their earliest exposure.

Chairman.—E. B. WILLSON.

Primary Schools.—How the prescribed studies of these schools ought to be taught, is a topic to which much space might be devoted. I cannot but have the conviction that here, as in many places, too much reliance is placed upon book teaching. This part of the work must not be neglected; it must be relieved, through a child's entire course, by much oral instruction. The story of the school reader must be so learned that the words are promptly called; yet, from an early stage of his progress, the teacher should translate the lesson read into other language, even if less correct, and exercise the pupil in attempting the same. She will thus do much toward banishing the high, strained tones that so often would be heard. The questions in mental arithmetic should be often varied, and the learner accustomed to frame them for himself. If a class is employed upon geography, the dry definitions of natural divisions will be rendered less wearisome by the sketch of some country or lake upon the map. Some apt word in the spelling lesson will be seized upon, and the scholars incited to make a trial in defining. Some common proverb will be selected, and the class shown what families of words may be traced around a common parent.

There is even now a good amount of oral and object teaching practised in these schools. There is room for much more, and it is to be hoped this will come in due time. Certain I am that whatever breaks away from too formal adherence to the printed page, and accustoms the children to depend more upon their power of individual attention, is action in the right direction.

Superintendent.—J. KIMBALL.

SAUGUS.

Reading and Spelling.—The reading and spelling in most of the schools at the recent examinations, was good—in some of the schools remarkably good. We cannot too earnestly or too often urge upon the teachers and scholars the importance of good reading and spelling.

former an art in itself of the highest consideration, and deserving to rank first among the fine arts. It is a pleasing accomplishment, and a constant source of delightful entertainment to friends, either in the sick-room, the nursery, or social and family circles. Where one is pleased with music, fifty are charmed with good reading; where one can become proficient in music, fifty may become good readers; where there is one fitting opportunity for the display of musical accomplishments, there are fifty for that of good reading. The culture of the voice necessary to good reading, makes that same voice most charming in conversation. It is the most fitting commentary upon the works of genius; it seems to bring the great, the good, the learned and wise of former ages, back to us from the land of shadows, and surround us with their living presence, and we sit down with them in familiar converse. No music so sweet below the skies, no instrument of man's devising can reach the heart like that wonderful instrument the highly cultivated human voice.

School Committee.—AUG. B. DAVIS, GEO. H. SWEETSER, JOHN ARMITAGE.

WEST NEWBURY.

Our school system may be perfect in theory, yet we must have the children in the school-room punctually, constantly, to secure the benefits of the school. If a boy is at work in one of our manufacturing establishments, he expects to meet the regulations of the factory. He must be there his ten hours each day, or he is dismissed. Parents do not keep him out to run of errands. Flimsy excuses on the boy's part do not give him a half or a whole day's release once or twice a week. Notes are not sent to the head of the establishment asking that "John may be dismissed" from one to two hours before the day's work is done. Now if the two cases are not in all respects parallel, yet they have enough points of similarity to lead to useful inferences. Children in the factory would not be punctual unless they were watched by parents; they would be suffered to make excuses if the parent had no interest in the results of their labor. If the parents felt the same interest in the education of their children that they do in their labor, the waste of educational opportunities would not be so great. That is a most cruel deprivation where the whole manhood of the child is limited and pinched for lack of the education that might have been secured. It is better to save a few dollars less than the children may put more into their years of preparation. Better a little present self-denial for the sake of the future achievement.

Again, we need the influence of the prominent influential business men in the direction of good education. If such men go into a school, spend a brief hour, say a word of encouragement to the teacher and the scholars, they will do an amount of good that can hardly be estimated. The simple

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presence of a man of character in the school-room is a stimulus to all. The registers of the schools will not show that the parents are excessively inquisitive. Most of them have been content to get their information second hand.

School Committee.—HIRSH TOZER, DAVID L. ANDREWS, DAVID FOSTER.

MIDDLESEX COUNTY.

ASHBY.

We have become deeply convinced of the importance of more active participation on the part of parents, in securing the prompt and constant attendance of their children at school. Those pupils that are frequently absent cannot be expected to make the most rapid and thorough progress. While their companions are advancing, they are falling to the rear. There are any good reason why every scholar may not be as prompt as the first of No. 9, spring term, not one of whom was tardy?

We wish also to correct a desire existing in some teachers and parents to have their children advance rapidly instead of thoroughly. Children should not be dragged through any branch of study, as they must be, if they are to have a thorough understanding of all they go over. We wish to find unmistakable evidences of thoroughness in all the exercises of the schools, and in some classes in every one; but there has recently been a great lack of it in a few classes in mathematics. This has made waste. We hope hereafter that all will act upon the principle that Colburn's Arithmetic fully mastered is worth more than Colburn's but partially comprehended.

We hope too that parents and teachers will encourage more the study of some branches of education, particularly the natural sciences not only in the law. In the spring term of No. 3, Calkins' "Object Lessons for Teachers and Parents" was used to a good purpose. In the fall term of No. 4, Physical Geography was studied by a class with great interest and profit. And Nos. 1 spring term and 5 fall term enjoyed instruction in the elements of Music. Such studies are of more value than French or Latin, when pursued only for a few weeks.

School Committee.—J. M. J. JEFFS, H. PARKER, J. P. HEYWOOD.

BELMONT.

Some fears have been expressed lest the course prescribed would drive the pupils beyond their strength. By examination of the courses of study pursued in several of the neighboring towns, we find that our own is quite as easy of attainment as either of them. Nevertheless, lest we all may be guilty of developing the brain at the expense of the body, we have made diligent inquiry as to the amount of study required to accomplish the allotted tasks. We find the High School pupil, from whence the alarm is sounded, is confined but four and a half hours each day in the school-room. Of that time, on an average more than two hours are consumed in recitation, leaving but two and a half hours for active study in the school-room each day. The teacher, in addition to this, requires an hour and a half's study out of school-hours. An amount of active labor surely, that ought not to impair any healthy constitution for five days in the week.

We fear if the truth were known, that many of the ill effects often alleged as arising from too close application to study would be found to result directly from causes entirely foreign to school labors. Want of outdoor exercise—eating at irregular hours—up late at night—oft' exposure to the night air—excessive love for the light literature of the 'day, would each come in for a large share. While we thus think, yet, inasmuch as a vigorous, cultivated mind can do but little if attached to a diseased body, we grant that we ought to err on the side of requiring too little labor rather than too much. The committee had ever been ready to give any reasonable indulgence in this respect, whenever solicited, if approved by the parent and recommended by the teacher. We should remember, however, that there are laws of our being, which like their Maker, never vary. Necessity of labor and application to develop our mental powers is one of them. We have none of us forgotten the oft-repeated maxim in our youth, "There is no royal road to learning." The gnarled and twisted oak of our granite hills will knit its closely compacted fibres together in the spongy swamps of Yucatan before high mental culture is attained without severe mental exertion.

School Committee.—WM. A. BLODGETT, DANIEL F. LEARNED, WM. J. UNDERWOOD, W. S. FROST.

BILLERICA.

Our Common Schools, next to our churches, are our most economical, our noblest and our best institutions. They form the common mind; they spread the wisdom of the universities out into the humblest families; and in turn they serve as well-springs to supply the universities. They are perfectly republican in theory and in practice,—the rich and the poor

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at here together, occupy the same seats, pursue the same studies, receive the same instruction. Distinctions here are levelled, saving from real merit and from good behavior; and here are taught and practised those first great lessons of republican simplicity and equality on which our civil constitution stands. Our Public Schools are the only nurseries of learning, temperance, piety; they are the cradles of civil freedom, the fostering seminaries of American civil liberty.

Our Common School system is, therefore, a source of strength and vigor; and to it may be traced to a great extent whatever we have of greatness, lofty in morals, excellent in government, surprising in industry or splendid in art.

The character of a town may be almost always correctly estimated from the condition of its Public Schools. Are they in good order? Are they progressive? Are the buildings neat, commodious, well ventilated, and well furnished? Are the children well supplied with books? Are they constant in attendance? Are the teachers intelligent, well paid and wide awake? Do the parents visit the schools? Do they maintain sound and healthful discipline? Do they strive to improve their children as anxiously as their lands and breeds of cattle? Then we may, nine cases out of ten, most certainly infer that such a town has felt the progressive spirit of the age, and that it contains a brave, thinking, wise, virtuous, and patriotic people.

The schools are the eyes of the town; open, there is light; shut, there is darkness; they are the pulse of the town, ever telling how the public mind beats; they are the moral thermometer of a town, indicating every degree of heat and cold respecting every great and glorious undertaking. They are indeed the head-springs of art, intelligence, of our social order, our municipal prosperity, and of our national power. Let us then vigilantly guard, cherish and improve these little seeds of learning, religion and of liberty.

School-Houses.—We take pains enough to adorn our dwellings and our churches. We paint them, paper them, carpet them and surround them with pleasant walks, with trees and shrubberies and when damaged by the wind or rain or careless hand, we at once repair them. Why should we not be just as much alive to the condition of our schools? Do not our little ones spend a large fraction of their lives in them? Are not their minds affected by the scenes surrounding them? Do not their bright eyes love order, neatness, beauty as ours? Is it consistent to make the home and church so comfortable and the school-room so dismal and forbidding? Give children a pleasant place for study and they will yield more readily to discipline, and will take a pride in protecting such a spot from injury.

in keeping it in order, whereas a rough and rude old building is a kind of standing invitation to them to disfigure and destroy.

Music and Drawing.—These branches, to some extent, should be taught in every school. The practice of music improves the voice, the health and temper. It breaks up the monotony of school routine,—it gives new life to study. Let it then be taught, and that efficiently. We expect our children to sing at home and in the Sabbath School,—we think the people ought to sing in church,—but where can they learn so easily and so well as in the Public Schools? But some teachers cannot sing,—what then? Why, then employ a person qualified, as Boston does, to teach in all the schools. What, here in Billerica? Yes! here in Billerica, to be sure;—for what should hinder, but our own indifference, our children's having educational advantages just as good as those who happen to live in Boston? Drawing, too, is easily learned in childhood; it is one of the most useful of the arts, and sharpens both the intellect and the eye. Every teacher knows, or ought to know, how to give instruction in it. The blackboards and the crayons are in part prepared for this; and if attended to, the style of writing and of thinking also would be materially improved.

In closing this report, the chairman of the committee would, on behalf of the town, tender most grateful acknowledgments to the Rev. Mr. Stearns, who, after having served the town most faithfully as one of its school committee for the long period of twenty years, now retires from his labors here with the kindest wishes of the children and their parents for his future welfare and prosperity.

School Committee.—ELIAS NASON, J. G. D. STEARNS, JOHN D. SWEET.

BRIGHTON.

Discipline.—We have steadily opposed the indiscreet and excessive use of the rod. We have directed our teachers never to resort to it until all other means have failed. But we know from years of experience, that the total abolition of corporal punishment, or the decision that it should never be applied to girls, would be fatal to the orderly government of our schools. We know that in the past girls have required it nearly as often as boys. There may be a millennial age approaching in which schools may be successfully governed without the rod, but that age has not yet arrived, nor are the signs of its immediate approach very clear and bright. It has been very truly observed,—and we commend the words to the candid consideration of our fellow citizens,—“There are in schools two classes of children,—those who are governed at home, and those who have their own way at home, whether a right or wrong way. In regard to children who are governed by their parents, and who are sent to school with parental instructions to obey the rules, there is seldom any occasion for discipline.

such, moral suasion is sufficient. Such children are a law to themselves.

In regard to children who are under no parental government, and go to the school-room knowing that a disobedience of its rules will not be punished at home, the assurance coming from those who know, is, that the government of such children in schools will be very difficult; that it will frequently be necessary; and that, as a final resort, either the refractory child come into requisition, or the refractory boy or girl be expelled. The law of love says, 'never make a bad boy worse by turning him upon the street to learn how to steal, and to become a pest to the community and a curse to himself, if a use of the rod, within the limits of justice to his person, can bring him into subjection.' This, we repeat, is the law of love."

School Committee.—RALPH H. BOWLER, J. P. C. WINSHIP, C. H. B. BAECK.

CAMBRIDGE.

The relation of the High School to the Grammar Schools presents questions demanding a more thorough consideration than has yet been bestowed upon them. The overlapping of this school upon the Grammar Schools to extend their courses into the proper domain of the High School has occasioned no little confusion, embarrassment and waste of time. The High School has a twofold function,—that of fitting a portion of its pupils for college, and that of finishing the school education of the larger number of its pupils. The same thing is also true of the Grammar Schools, which are required to do a twofold work, namely: that of preparing a part of their pupils for the High School,—the college of the Public School system,—and that of finishing the school education of the great majority of those who attend them. Whether the plan of training these sets of pupils in the Grammar Schools in the same way is, either in theory or in practice, that could be devised, has never been fully discussed that we are aware of. The truth is, the High School has been added as an upper story of the Public School system, and we have not yet come to the solution of the question whether the original structure is to be altered to make it correspond with what has thus been superadded upon it. It is clear on theoretical grounds, and we think is manifest in the practical working of the two parts of the system, that some changes are required in that part which properly constitutes the foundation, in order to secure the strength and symmetry of the complete edifice. We are inclined to think that real economy of time and labor would demand that branches which can scarcely be fairly commenced in the Grammar Schools, and must be pursued mainly in the High School, should better be excluded from the Grammar School course of pupils fit

for the High School. In fact, the Grammar Schools should have two courses of study; or, at least, a course of study susceptible of meeting at once the wants of candidates for the High School, and of those who complete their school education without entering that institution. It is a serious question, for instance, whether the study of English Grammar is an advantage to any class of Grammar School pupils; but whatever may be said in favor of giving it to those whose education is to end with the Grammar School, there can be no good reason assigned for commencing it there in the case of those pupils who are preparing for the High School. The study, as pursued in the Grammar Schools, is for the most part a drudgery and an offence to the pupil; and all he gains in the knowledge of the structure and philosophy of the language is little more than the accumulation of so much rubbish, which must be swept away before any true progress can be made in the real mastery of its elements.

School Committee.—J. WARREN MERRILL, JOHN N. MURDOCK, JAMES R. MORSE, SUMNER E. MASON, JOHN B. TAYLOR, NATHANIEL MIGNILL, CHARLES A. SKINNER, HENRY W. WARREN, COURTLAND W. ANABLE, HENRY W. MUZZEY.

CARLISLE.

Three years ago a proposition was made in town meeting to increase the school committee from three to six members, the additional members to be so selected, that each school be specially represented on the board by a member living within its limits. The friends of the measure claimed that if adopted and honestly executed it would secure a much more harmonious and profitable and a less expensive supervision of the schools than had been attained under a smaller committee. After full discussion, and against strenuous opposition, the proposition was carried and the enlargement of the committee made. What has been the result? What has the experience of three years taught? What in reference to the harmony, progress and profit of the schools? We do not hesitate to say that an honest comparison of their condition during those years with what it was the three years preceding, must convince every one that they have been mutually benefited by the change; that discords, disruptions and breakdowns, conflicts of jurisdictions, schools without scholars, scholars alienated from teachers forced into the school-rooms against the will and wishes of districts, and many other items of similar character common in the history of the schools three years ago, have not appeared since.

It was claimed, by the opponents of an enlargement of the committee, that it would increase the expense in proportion to the number added. How has it been? Let facts and figures answer.

In the last three years, under the old system, the amounts paid for the services of the committee were: in 1861-2, \$65.25; in 1862-3, \$58.25;

n 1863-4, \$66.40 ; in three years, \$189.90. In the last three years, under the new order, the charges have been : in 1864-5, \$41.59 ; in 1865-6, \$39.15 ; in 1866-7, \$27.88 ; in all, \$108.07,—a saving in three years of \$81.90.

School Committee.—B. F. HEALD, TRUE WIGGIN, S. H. ROBBINS, E. J. WILLIAM S. LEE, GILMAN NICKLES.

CHARLESTOWN.

Duties of the Superintendent of Schools.—SECT. 1. The Superintendent of Public Schools shall be elected annually, by ballot, at the first meeting of the board in February ; to enter upon the duties of his office on the first day of March next following.

SECT. 2. He shall devote himself to the study of public schools, and keep himself acquainted with the progress made in other cities, in order to suggest appropriate means for the advancement of the Public Schools in this city ; and shall see that the regulations of the Board in regard to the schools are promptly carried into effect.

SECT. 3. He shall visit the schools as often as his other duties shall permit ; and each school at least once in every quarter. He shall advise the teachers on the best methods of instruction and discipline ; and for a better illustration of such methods, shall hold stated meetings of the Primary and Intermediate school teachers once in each quarter, and shall have authority, for this purpose, to dismiss the Primary and Intermediate Schools at such times as he shall deem advisable, not exceeding one-half day in each quarter. He shall also hold stated meetings of the Grammar School teachers once in each quarter, and shall have authority to dismiss the Grammar Schools not exceeding one-half day in each quarter for that purpose.

SECT. 4. He shall render such aid and communicate such information to the committee, or the various sub-committees, as they may require of him ; and with the assistance of the sub-committees he shall hold stated semi-annual examinations of the schools. He shall endeavor to secure uniformity in the examinations of schools of the same grade, and shall collect the various reports, records, etc., used in the Public Schools.

SECT. 5. He shall consult with the different bodies who have the control of the building and altering of school-houses, and communicate information on the subject as he may possess ; and he shall suggest plans for building and altering school-houses as he may consider to be for the health and convenience of the teachers and pupils, and most economical for the city ; and he shall advise with those through whom, directly or indirectly, the school appropriations are expended, that there may be more efficiency and economy in such expenditures.

SECT. 6. He shall attend the meetings of the board, except when the subject of his own election is under consideration ; and shall have the same rights and privileges as a member of the school committee, except the right to vote.

SECT. 7. He shall make a semi-annual report to the board in July and February, in writing, giving such facts and suggestions relating to the condition of the schools, and the increase of their efficiency, as he may deem advisable. He shall also assist the president in preparing the annual report of the school committee, under the direction of the board.

SECT. 8. He shall keep a record of the names, ages and residences of persons who make applications for situations as teachers, with such remarks and suggestions respecting them as he may deem important for the information of the committee ; which record shall at any time be open to the inspection of any member of this board. And he shall perform such other duties as the school committee shall from time to time direct.

Teachers.—Geniality of spirit and kind attentions are always effective in stimulating and directing the higher affections of children, and therefore should never be overlooked by those who instruct them. It is not enough for teachers to mean well, and cherish high resolves to make their pupils advance. The rod of correction may be required at times, and a strong and well-balanced will, continually ; but children are won to noble achievements by manifested sympathy, and appeals to their consciences and hopes, rather than by opprobrious appellations and threats. Harsh expressions soon lose their power to stimulate or to restrain, but an earnest hope or a good purpose may gather strength with each passing day, and lead a child forward to repeated successes. Fortunate are those teachers who know how to call into exercise the better natures of the young, and to infuse into their hearts an honorable ambition to accomplish the true ends of human life.

Reading.—At the February examination of this (Warren) school, Mr. Stacy Baxter examined all the classes in reading, and gave a report upon that subject of such general importance, that we deem it worthy of publication and careful perusal. Mr. Baxter says :

“I have listened to the reading of all the scholars of the several divisions of the Warren School, and can express myself well pleased with the effort, on the part of both teachers and pupils, to do well in this department. The children speak so as to be heard without difficulty, and read with a fair intellectual appreciation of the subject-matter, and in some cases with tones expressive of true feeling. My impression is that the reading in this school will compare favorably with that in the other schools of the city. As elsewhere and always, there is a large margin for improvement.

"In the matter of expression, I think it would not be difficult for teachers to show, with a little encouragement, a good degree of expression in a comparatively short time. The most that is needed is to express as much feeling in their reading to the scholars, as they do in common conversation upon different subjects. Children very soon catch the different tones which indicate varied feelings, and, if encouraged, will make them.

"But our young teachers dwell too much in the intellect or in the anxiety of anxiety while teaching reading,—they are the Marthas, 'careless and troubled about many things,' while of necessity, they neglect the one thing needful,—a true expression. For how can a teacher in a condition of mind, talk of the beautiful, the sublime, the mysterious, the tender, the pathetic, all of which may occur in one paragraph of a lesson? The children that read with some force do it in a kind of sing-song tone. This arises in part, of course, from the natural temper of the child, but full as much, I think, from the manner in which the teacher corrects, when they omit a word, mispronounce, or fail to emphasize. When the correction, the teacher repeats the emphatic word, with the emphasis of a tone which says, 'You are at fault.' Children are imitative, and of course they repeat the tone given them, and whether the word to be emphasized be beautiful, lovely, fearful, heavenly, devilish, pretty or ugly, it receives the same kind of emphasis. The child that reads it with a tone which says, 'Haven't I told you repeatedly that this word is to be emphasized?'

"It would be a good plan for the teacher to read to her class, once in a while, some interesting story or stirring piece of poetry not found in the text-book. If the selections are interesting in themselves, and are read with expression, the very tones of the teacher will secure attention and serve order, while the ear and the heart of the child will be cultivated.

"The spoken English language contains upwards of forty distinct elements, represented to the eye by twenty-six characters. Some of these sounds are very grateful to the ear; and all of them together form the 'music of our language.' But the sound becomes discordant when it is in a wrong connection; and a word becomes unmusical when an essential element is omitted, however well the remainder may be enunciated.

"It seems to me that the young ladies who are expecting to enter the duties of teachers in the introductory schools, should not enter a High School without a thorough knowledge of the elements of the English language, and some idea of a good method of communicating the same to children. Then let the requirement for admission to the Grammar School be as definite in regard to this matter as in arithmetic. Say the candidate must be able to give all the vowel sounds of the language that are clearly defined in Worcester's Key,—if that be the standard,—that they shall be able to

give any sound of a, e, i, o, u, by the marking, and be able to name any vowel sound when they hear it uttered alone or in a word. And this can be as easily done as the requisite amount of addition and multiplication can be accomplished; for the principal vowel sounds, to a cultivated ear, are just as definite as 8 times 8 are 64; and they can be as easily acquired as a knowledge of the multiplication table."

Chairman.—Geo. W. GARDNER.

The true Mission of the Public School.—The Public School is an institution of far more importance, of wider and loftier aims, than the majority, even of intelligent people, appear to apprehend. Its first and specific work is to cultivate the intellect,—to give expansion, harmony and direction to the mental powers. Its mission, however, does not terminate here; it includes, in its broad comprehensiveness, the preparation of the young for the conflicts and duties of life in cultivated and active society. It does not usurp the place of the church nor of home. It is the handmaid of each, and supplements the labors of both.

The Public School is an institution of the State, and should therefore fit its pupils, in the most thorough manner, for the practical duties of citizenship. It assumes the right, in the name of the Commonwealth, to call children from their homes and instruct and govern them for a period of time; and in the cities and populous towns it actually holds them under its formative influence through as large a portion of the year as the laws of health will allow them to spend in the confinement of the school-room.

Holding the relation it does to the young, and through them to the State and to all the vital interests of society, it ought to do something more than teach the elements of learning and quicken to vigorous action the faculties of the intellect. During the ten years it holds the plastic young in its moulding hands, it ought to accomplish for them a grand work which will tell favorably on their future as citizens and as moral beings.

In the great work of popular education, in addition to the training of the intellect, special attention should be given, among other things, to the formation of character, to the cultivation of taste, the duties of citizens, personal manners, and the harmonious development of the physical powers.

That I have not, in these remarks, overstated the true mission of the Public School, will be admitted by all who candidly consider the possible grandeur, and the ever-recurring hazards of human life, or the duties of teachers as they are outlined by the statutes of the Commonwealth. The Public School is not to send forth mere grammarians and arithmeticians,

out to supply society with men and women having the graces and strength of finished and noble character.

In the construction of school-houses there should be a regard to appropriate uses, not less than to economy. They should be provided with conveniences so as to avoid all needless waste of time and labor.

There should also be a strict regard to health.

The means of heating and ventilating are often inadequate or adjusted to each other, so that it is quite impossible to preserve an atmosphere fit for study or for the use of human lungs.

Taste also has its claims. The school-house is itself an educator; whatever its character, it acts efficiently upon the tastes of all its inmates.

Says Mrs. Sigourney, in her admirable essay "On the Perception of the Beautiful," "Why should not the interior of our school-houses possess somewhat of the taste and elegance of a parlor? Might not the vases and flowers enrich the mantel-piece, and the walls display not only well-executed maps, but historical engravings or pictures, and the book-cases be crowned with the bust of moralist or sage, orator or 'Father of the Country?'" "Let communities, now so anxious to raise the standard of education, venture the experiment of a more liberal adornment of their dwellings devoted to it. Let them put more faith in that respect to the beautiful which really exists in the young heart, and requires only to be called forth and nurtured, to become an ally of virtue and a handmaid to religion. Knowledge has a more imposing effect on the young mind than it stands like the Apostle, with the gifts of healing, at the beautiful entrance of the temple." "I hope the time is coming when every village school-house shall be as an Attic temple, on whose exterior the occupant should study the principles of symmetry and of grace. Why need the structures where the young are initiated into those virtues which make life beautiful be divorced from taste or devoid of comfort?"

If the object of education is merely to impart a limited knowledge of the elementary branches, it matters little where the school is held, or how unattractive its surroundings; but if its object is, in addition to the acquisition of knowledge, to cultivate taste, to open and purify the fountains of happiness in the human mind, every part of the edifice should be adapted to this noble end. The influence of Greece and of Rome has affected the tastes of Christendom from the erection of the first Christian sanctuary to the present hour. In the school architecture of this country has had a constant and powerful influence in moulding the tastes and manners of the American people. It is not true, as travellers from the old world almost unanimously affirm, that the great mass of Americans are rude in their manners, may be because be found in the rudeness of the structures where they were educated?

Will it be asserted that even the poorest school-rooms are as good as the homes from which many of the children come, and that there is therefore no need of improving them? This implies a misconception of the work of education. The tastes of the majority are not to be brought down to the standard of the unfortunate few. The mission of learning is to elevate every class; to inspire a better taste in those who have no means of culture at home, and, by awakening individual minds, to bring up the masses. A proper education in the school-room would so refine the tastes of children reared in rudeness, that they would eventually seek a better and a more elegant style of life. Improvement in the manner of living usually gives strength to the domestic and social virtues.

Spirit of the School-room.—With suitable encouragements, children patiently endure fatigues and surmount difficulties with delight. The vast majority of them do not fear toil or deprivation if they are made to feel that they are doing something that is manly, noble. The animus of the school-room is therefore a matter of great importance, and should be carefully watched over by visiting committees, as well as by teachers. Some schools are thoroughly alive; the teacher and scholars are working with evident delight in the object to be accomplished; in others, the scholars have but little zeal for study, and the progress made is secured mainly by force, either of the teacher's will or rod. A studious teacher, whose mind is animated by new thoughts, fresh and apt illustrations, will find very little difficulty in kindling the enthusiasm of pupils of ordinary ability, and enabling them to grapple with difficulties at the sight of which, if left to themselves, they would shrink back in complete despondency. But by the spirit of the school-room I include far more than a zest for study. Moral forces are constantly operating there, awakening the faculties and harmonizing them with the beautiful and the good, or perverting them to the practices of vice. Conscience, hope, and indeed all the affections of the soul, as well as memory and reason, are undergoing a continual process of training in the school-room, and the culture which they receive there will mark the character in after life. If the ruling spirit is such as arises from indifference to the distinctions between vice and elevated morality, those faculties will inevitably be perverted or stultified; if, on the other hand, it is such as springs from a deep consciousness of rectitude, and from active sympathy with what is great and honorable in human conduct, it will develop the higher faculties, bring the soul into communion with the moral forces of the universe, and give to the character a strength and beauty lasting as the ages. Every day brings to each young heart expansion and beauty, or blight and deformity;—there is no escape from this alternative. This fact invests teaching, and the selection of teachers, with a high responsibility. The financial

considerations involved in the election of a teacher are, in comparison with those of a moral nature, lighter than the dust of the balance.

Superintendent of Public Schools.—JOHN H. TWOMBLY.

DRACUT.

Tardiness and Absence.—These are our enemies. They are thwarting our efforts. They cripple our schools more than parents realize. We designate "parents," because we are convinced that they are almost exclusively the remedy for these evils. Why will you not take this matter to heart? Why will you permit your children, day after day, to interrupt the school? Are you training them for business? Would you employ a tardy lad? We earnestly ask you to do your duty in this matter. We are striving to make our schools an honor to the town, but to do this you must co-operate with us. You should see to it that your child is neither tardy nor absent. We have by far too many tardy and absent marks. Of all our examinations, that was the least successful where we found the greatest number of absent marks. Encourage your children to be regular and punctual, and both of these obnoxious evils will be thoroughly destroyed.

School Committee.—GEORGE PIERCE, JR., L. S. WATTS.

LITTLETON.

Education a Religious Duty.—We do not now refer to instruction in religious doctrines, which is not the primary object of our Public Schools, but to secular education viewed from a religious stand-point. In its other interest, this has its religious aspect; and its end, its meaning and its importance cannot be properly understood unless thus considered.

Religion has always been the foster-mother of education. In ages learning, elsewhere extinguished, found an asylum in the Church. Learning revived with the revival of religion in the great Reformation. In the early history of our own country, it was religious considerations that provided for schools and established colleges. And at this time religion so directly contributes to the prosperity of our schools as a devotion to the will of God in all that pertains to them.

Some may think it best to separate religion and education into separate interests, each having its own claims and duties; but to separate them is to do violence to both. God's government embraces all things. Children are his marvellous work, his precious gift and his unwearied blessing. They are created for his great and blessed ends. The relation between parents and teachers is of the nature of a sacred trust. They are to be a blessing, a joy and a comfort; yet not absolutely ours, but of

to our care, to be trained up for God and for an important future. To lose sight of God's title to our children, and of his will respecting them, would be to misapprehend our own relations and duties toward them. Unless we regard them in their relation to God, we do not understand the end of their being, nor the true idea of their education.

Piety one of the Qualifications of the Teacher.—A living, practical piety is one of the most important qualifications of a teacher. One must be in harmony with the will of God in order to do that will. One must be in daily fellowship with Him in order to have the temper and disposition best adapted to the instruction of the young. Not to believe in His love of children, in His desire for their best welfare, and in His willingness to direct and succeed efforts to benefit them, and not to look to Him constantly for help, is to neglect one of the most important duties of a teacher. A Great Presence in the school-room is ignored, a Great Helper is neglected, and the condition of the highest success is unfulfilled. In periods of weariness, perplexity and despondency, a teacher needs to know how to cast all care on the heavenly Father and secure his help.

Cases of peculiar difficulty—as when one inquires how a dull, or a listless, or a wayward, or obstinate pupil, is to be won back from evil habits, should be carried up to God with request for guidance and help.

Some of the most important lessons of school are derived from the example of the teacher. This is a text-book always open before the eyes of the school, an object of observation, of study and imitation. The spirit and temper of the teacher are insensibly communicated to the pupils; they learn to take the teacher's stand-point, and to look out upon life and the world as the teacher does.

The most thorough scholarship and brilliant accomplishments cannot atone for the exhibition of a proud, or selfish, or narrow, or passionate spirit. An ungodly person cannot have the peculiar type of character which lies at the foundation of the best influences. He can never act under the purest motives. He cannot, in emergencies, have the wisdom and fortitude which would be available, did he use the privilege offered by a merciful God. He cannot so effectively appeal to the best sensibilities of his pupils, as he would be able to do if he were in fellowship with God.

The Christian character that devoutly recognizes God in everything, and glows with love to all, and is in sympathy with every good work, is not only the highest, but the only style of character that should be set for the imitation of the young.

The character and spirit of the Great Teacher are worthy of universal imitation. His dignity and love, His gentleness and firmness, His earnestness and patience, His purity and sympathy, are still the elements of a character toward which every teacher should aspire. They who would

realize the best success must have fellowship with Him. His spirit lead and strengthen them, His love animate them, and the smile of approval be their best reward.

The care of a rational and immortal being in the forming period of existence is one of the most important trusts given to man. At this season character takes its shape and complexion. It is the season of opportunities,—what those opportunities shall be worth is in a great measure in the power of the parent and teacher to determine. Their neglect may almost destroy the value of good advantages, while a vigilant use of inferior education, with the blessing of God, may secure some of its most important objects.

A wise provision for schools is of advantage to the general interest of the town. It increases the value of every farm and of every dwelling, and is one of the essentials of a place. Towns may be found in which the schools are neglected; the school-houses uncomfortable and unwholesome; the schools short; the teachers incompetent; the parents indifferent; the scholars rude and backward. Such towns save a few dollars and pay diminished taxes for schools, but it is an immense sacrifice in other respects. All interests,—social, pecuniary, political, moral and religious—are depressed by this grand defect of poor schools. Wise parents are unwilling to allow families of children to remain in circumstances so unfavorable. The best of the people become dissatisfied and restless, and move away. Real estate depreciates; all values fall, and no one can raise them to what they might and should be, till better provision is made for the education of the young.

Best Schools Cheapest.—Best things are in the end least expensive. It is so with the tools of the mechanic and the instruments of the farmer. Wooden ploughs, like those in use eighty years ago, might be purchased at less cost than the beautiful instruments now employed, but they would be in use far more costly. The jennies and looms of our fathers require large outlay of capital, as compared with the simple wheels and looms of our grandmothers. But they produce nothing for less money. The best school arrangements are most profitable in the end. Their influence is felt in every house and by every person. The mind is improved and even real estate rises in communities which provide for educational interests. The most perfect system cannot indeed produce desired results. Dull scholars are found in the best schools, but the law of nature as in every other interest, the law of cause and effect holds true. Provide adequately for the education of the young and intelligence will be the general result. Neglect the interests of education and the town with its sad train of disadvantages will prevail.

The Whole Town Benefited by a High School.—All houses in the town cannot be equally near its school-house. All parts of the town

equally near a central High School. In some cases distance may diminish the value of a school, yet the disadvantages of distance are often over-rated. Some of the poorest scholars, who have been most irregular in attendance and indolent in study, have been within five minutes walk of the school. Some of the most punctual, constant and advanced have lived in the remote parts of their district. It is believed that the history of the town for many years will show that remoteness from schools, within the narrow limits of our territory, has not hindered the education of the children. On the other hand, this apparent disadvantage has favored health, diligence and good scholarship. It is therefore for the interest of every part of a district, even the most remote, that the school should be the best possible.

It has been unwisely objected to a High School at or near the centre of the town, that it will afford special privileges to the central districts, with little advantage to other sections of the town. It is a gain to the more distant parts of a town that there should be a thrifty centre. Take away the villages from Concord and Groton, and leave instead only farms and scattered dwellings, and at once the value of every homestead in those towns would fall. As those villages grow and their privileges improve, all the interests of their towns rise with them. Should some change occur by which the population of the centre of our town should rapidly increase, and be numbered by thousands, the change would be for the advantage of every part of the town. Whatever benefits the centre of Littleton, benefits the Old Common and Nashoba and Newtown. There is properly no rivalry and no occasion for jealousy between the centre and the other neighborhoods of the town. A country without cities and villages would lack one important condition of prosperity; and not only are cities and large villages needed, but every town needs its own village centre. The larger and more prosperous its centre, the better for the town as a whole.

As citizens then we should consider, not what will be for the particular benefit of one section, but what system of schools do we as a town need? It is for the interest of the most remote sections, that as a town we should have the best possible facilities for education. As the mill, the store, the post-office, the railroad station and the public house are of decided advantage to all, though not equally convenient for all, so a good High School, at or near the centre of the town, would be a blessing from Harvard line to Westford and from Groton to Acton. The disadvantages of distance from school, like those of distance from the store or railroad station, are to be regretted, but unavoidable to most and a slight consideration compared with the value of the privilege.

The true principle of social life is to adopt that which will be for the general good. If a measure is decidedly for the advantage of a community as a whole, even those not directly benefited should favor it. They

upgrade themselves and wrong society, who demand that personal interests shall stand before the higher and broader interests of the public.

Chairman.—C. M. WILLARD.

LINCOLN.

Let public spirit fail in every other work sooner than in the most providing educational advantages. Let every other town appropriate a stunted rather than those for the support of our schools. Let ourselves abreast the times in this work. Never in the history of our country has there been greater activity in educational matters, or occasion for interest and effort. We have educational journals; associations, town, county, State and national; institutes and conferences held with considerable frequency, with much discussion of subjects, exhibition of methods, and special schools for the professional teachers. With all these appliances we ought to have, as indeed we have, improved teaching and better schools. The mechanic and the artist are advanced by the patient efforts of artists and inventors, and the art of teaching forms no exception to the law which governs all progress.

The highest welfare of our Commonwealth is intimately connected with the education of its children. There is no interest under the care of the State that is of so much importance. That town or city that makes appropriations for its schools is wise. Our fathers nourished with constant efforts their gradually developed system of education, based upon the principle that education is a debt due from the present to future generations. Their labor is justified by its results. It is our duty to carry forward the work, presuming that no goal of perfection has yet been reached. The greatness of our legacy from those who have gone before us increases our debt to the future. Massachusetts has made for herself an honorable name by her systematic efforts for public education. Younger sisters in the republic have copied her methods, and secured the services of teachers trained under her system.

What more coveted position for a State, than to have her educational institutions studied by educators from distant States and nations, as standard models? "You will confer," says Epictetus, "the greatest benefit on your city; not by raising roofs, but by exalting the souls of your citizens; for it is better that great souls should live in small habitations than that abject slaves should burrow in great houses."

School Committee.—HENRY J. RICHARDSON, WILLIAM FOSTER, J. DEXTER FARRAR, JR., SAMUEL H. PIERCE, WILLIAM MACKINTOSH.

HUDSON.

And first we desire to call attention to the following table, showing the loss to the town in mere money in consequence of the absence of those scholars from the different schools, who are members of the same. It does not touch the class of non-attendants of whom we have spoken before, nor does it include any of the expenses of the school outside of the sums paid to the teachers. If we were to add to these figures all other expenses attending the schools, it would show a still larger amount of waste.

TABLE showing the Number of Days of Absence in each School, for each Term, and Actual Loss arising therefrom for the year 1866.

SCHOOL AND WARD.	TERM.	Days' Absence.	Cost.
High,	{ Summer,	327	\$39 70
	{ Fall,	459	48 76
	{ Winter,	639	50 57
	Totals,	1,425	\$139 03
Grammar,	{ Summer,	500	\$16 03
	{ Fall,	330	8 25
	{ Winter,	550	14 80
	Totals,	1,380	\$39 08
Intermediate, . .	{ Summer,	450	\$11 07
	{ Fall,	275	8 52
	{ Winter,	440	10 35
	Totals,	1,165	\$29 94
Primary,	{ Summer,	550	\$15 46
	{ Fall,	495	14 47
	{ Winter,	605	54 81
	Totals,	1,650	\$43 44
Ward 2,	{ Summer,	450	\$15 00
	{ Fall,	165	7 50
	{ Winter,	495	20 84
	Totals,	1,060	\$43 34
Ward 3,	{ Summer,	165	\$11 25
	{ Fall,	225	20 94
	{ Winter,	120	6 00
	Totals,	510	\$38 19

Aggregate amount of days there should be for the year, .	45,
“ “ of actual attendance for the year, .	88,
Aggregate amount of days of absence for the year, .	7,

Cost of days lost, \$344.09, being nearly 16 per cent. of the time, and ent. of the money.

The loss in the different schools is varied by the number of scholars and the same.

Now calling two hundred days a High School year, this lost equal to thirty-six years for one person, or nearly the time required nine persons to go through with a regular college course, or to nearer home, it is equal to throwing away the time of a school of four scholars for one whole school-year of thirty-two weeks. Those who present at the examination of the school taught by Miss B——— close of the fall term, will please tell us the effect of discontinuing school for one whole year, and continuing all the expenses of it the same time, which would not be as much by about fifty dollars as the loss before shown, and this is no more than has been done.

Again, the money lost by the absence, as before shown, would pay salary of the High School teacher four months, or it would purchase apparatus for illustrating the natural sciences in our schools, or would furnish all our school-rooms in two years with good musical instruments long talked of.

In all seriousness we would ask our fellow-citizens if they manage their business affairs in this way?

This loss of time and money we fear is not the most serious in many cases.

Where are our children when out of school at the time the school is in session? Some of course are detained by sickness or other necessity; some for pleasure; some because they “don’t want to go to examination” (which shows a serious lack of family government;) and many, registers show, are “absent to work.”

Now we cannot believe that any amount of money earned by a man or Miss, when he or she ought to be in school, will ever make up the loss of an education. When our prominent business men are willing, with such unanimity, to be so heavily taxed for the support of our schools, it is certainly suicidal in us, who can give our children more matrimony than an education, not to avail ourselves to the utmost of the precious advantages.

School Committee.—GEO. B. RAWSON, D. B. GOODALE, H. C. DUGAN.

LOWELL.

A department which requires an investment in real estate of some \$200,000, an annual outlay of more than \$80,000, and employs ninety-eight specially educated men and women at liberal wages, would in almost any business be held, without question, to require an active, vigilant supervisor. When to the foregoing features we add the general oversight of six thousand children scattered through a great city, and the educational oversight of the second municipality of the Commonwealth, the constant services of a superintendent would seem, and experience shows them to be, as important in our school system as in a cotton-mill, a railway or a machine-shop. Those who suppose the office to be a sinecure are respectfully referred to the retiring superintendent's description of his labors for the present year as given in his report. An officer who finds that amount of work to do and does it well, cannot easily be considered superfluous or the subject of unnecessary expense. The result of the committee's experience is such that they would sooner think of abandoning almost any other feature of our school organization than the office of superintendent.

Not only should teachers be well educated in books and in things, but they should have the teaching faculty. This rarely comes by nature, nor can it be acquired by all who desire it. Many a profound student of Algebra or Geometry cannot teach Vulger Fractions, and not a few proficients in Trigonometry would totally fail as teachers of Addition or Subtraction. The power to teach, then, does not depend on scholarship. It must be worked for and achieved, like skill in any other calling. The candidate for the ministry must study theology, the physician must have accomplished a long and thorough course of medical studies and researches before he receives his diploma, and the embryo lawyer must serve almost half as long as Jacob served for Rachel before he can help his first client get convicted. In the manual arts, too, a course of training is considered necessary before the beginner becomes a journeyman. Indeed, teaching is the one great if not only exception to the rule. This delicate, difficult and most important calling is too often thought to require no preparation beyond a Common School education. Hence, every year, many young women on graduating from the High School immediately apply for permanent teacherships, and through themselves, their relatives and their friends, keep a constant pressure on the committee to secure the desired means of support.

Through the occasional election of such applicants, there can be found in some of our schools rude, old-fashioned methods of teaching, or rather of hearing lessons, that have long been obsolete in most intelligent villages. During the past year some of our teachers have even been found compelling their pupils to commit to memory the pages of their

text-book in History, and to be laboring under the delusion that this was teaching History. With the liberal salaries paid, is it not that the untrained and inexperienced should no longer be placed in schools? The State has provided four Normal Schools of high character where gratuitous instruction is given to those who wish to become teachers. Other institutions for the same purpose are found in various parts of the State. If a young woman has not taken pains to fit herself especially for teaching, if she has not availed herself of the free instruction of the Normal Schools or has not acquired experience at the expense of some other opportunity, is it not time that she should be refused a place even among the candidates for examination? When our young men on leaving High School are at once selected to preach, or practice law or physic, to manage mills or engines, to be cashiers or treasurers, or to take charge of shops or railways, it will be consistent to simultaneously call the young women of the other sex to our teacherships, but not till then. In some parts of the State evil complained of has been carried so far that the public teachers have been mainly regarded as sinecures where the female relatives and friends of the committee might accumulate a little dowry. It is time that no person will ever find reason to say the same of Lowell.

The committee agree with the superintendent that our High Schools should offer a much wider range of study. Geology, which unveils many of the wonders of creation, and reveals to us so much of the power and wisdom at every step we take upon the earth;—Botany, which opens the eye to such an infinitude of beauty, before unappreciated;—Agriculture, which has so much practical usefulness, and which encourages habits so promotive of health and happiness;—Zoölogy, which is so familiar with the animal kingdom and supplies the mind with so many resources wherever and however it may be situated—these, should find a place in our regular High School course. Instead of the present superficial study of Physical Geography, there should be a thorough handling of that subject, binding the three branches named, and their adjuncts, into a harmonious whole.

Chemistry and Natural Philosophy should be so taught that the graduate of the High School would be as familiar with the chemical and mechanical science of common life and of the principal arts followed in our community, as with those frivolities, fashions and amusements which are so readily learned, whose hard technical terms are so easily forgotten, and whose details are so exactly remembered. Nor should Astronomy remain the dry, useless branch it now is, but it should be made a familiar study, and the pupils be led never to look on the evening sky without a feeling that it indeed declares "the glory of God," nor without a sense, as well as eagerness to make the dulllest eye see how "the firmament sheweth his handiwork." Let these sciences be taught with the t

ness and enthusiasm with which Mathematics and the Classics now are, and our High School will furnish an English education of far higher quality than ever before. The committee see indications of progress in this department, and believe that the next board will find the school on an ascending path, gaining every term a wider and wider sweep of the educational horizon.

Many scholars enter the High School a year too soon. A large share of the lowest class there should remain longer in the first class of the Grammar Schools. Then, not only would the High School, with its more mature and better prepared pupils, reach heights now beyond its strength, but the Grammar Schools would be more than correspondingly elevated. These latter schools are doing well the work assigned for them and are meeting with gratifying success, but the premature transfer of their best classes to the High School, reduces them far below the position they should occupy. General History, Drawing, and the elements of the Natural Sciences should all be embraced in the Grammar School course, a course beyond which so many of our young men and young women are unable to proceed. The interest of this latter class require that the Grammar Schools furnish a more advanced course than at present. If, then, a part of the lowest work of the High School should be transferred to the Grammar Schools, both grades of schools and all classes of scholars would be greatly benefited.

In the course of study indicated for the Grammar Schools, it is hardly just to say that any one branch should be regarded as more important than another. All should receive proportionate attention, and the educational structure be kept harmonious and evenly balanced. It seems, however, with respect to those whose schooling ends with the Grammar Schools, to be quite as important that they should have been made familiar with the world in which they live—its history, its geography, its commerce, its animals and plants and minerals, its geological structure and productions, its astronomy, the laws of natural philosophy and those which govern the health and mental development of mankind,—as to have mastered the more advanced problems in arithmetic or to have fastened into the memory the abstrusities and often fanciful *minutiæ* of the higher divisions of our constantly changing text-books in Grammar. The great Book, speaking of the wisdom of Solomon, sums up the subjects of his learning which attracted the attention of “all the kings of the earth,” as follows:—

“He spake of the trees, from the cedar tree that is in Lebanon even unto the hyssop that springeth out of the wall; he spake also of beasts, and of fowl, and of creeping things and of fishes.”

In the subordination of all other branches to Arithmetic and Grammar, seen in some of our schools of this grade, are not we forgetting, not merely some of the most useful and improving topics of information, but some of

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the sublimest sources of wisdom? May it not, then, be hoped that by increasing the requirements for promotion, a higher class of scholars hereafter be retained in the Grammar Schools and a wider range of studies there pursued; while by annually introducing a more mature class into the lowest division of the High School, that institution shall also be expanded and elevated?

A great mistake made by public opinion, unfavorably affects the position of Primary teachers. It is thought that a poorer teacher will answer the needs of a Primary School than for any other. Consequently, some teachers regard their service in these schools as a sort of apprenticeship, and when, after a fair degree of success there, they may rightfully expect to be transferred to an assistantship in a Grammar School by way of "promotion," this is a grave error. It is vastly easier to find a good teacher for a Grammar School than for the Primary. She who receives the beginners and beguiles them into the simplest of learning's ways, who helps their feet over the petty obstacles which another teacher of advanced attainments might never see; who shares their little sorrows and sympathizes with their tiny pleasures and ambitions; who teaches them to form good habits of order, to acquire self-discipline and, withal, to love to learn; who would long to know more, does a work of which the good effect shall be felt by these scholars in all future life. The Grammar and High Schools, when the University, labor at a disadvantage with a student whose Education was perverted or neglected. With a thorough Primary Education, poor teaching in the grades above, is of far less injury. Kirtland used to say that in the mills he built in Lowell, he expended more money to lay low the surface of the ground than above it. Without this, how many Pemberton Mill disasters might we have had here! So does the good Primary teacher labor—unappreciated and undervalued by most of the community, and rarely thought of when the graduates from High School or College with honor, but as truly without a share of the credit as was the faithful builder who laid deep the foundation, with perhaps greater care than the architect bestowed on the frieze and cornice which alone catch the eye of the world and draw admiration.

Our city has avoided the blunder made in some older communities where the Primary teacher receives less salary than the subordinate teacher in the higher grades. Let the public learn to give our Primary Schools the value and assign their instructors to the front rank of the educational system, and these teachers and their friends will outgrow the sickly notion that the successful principal of such a school could be "promoted," to a subordinate position in any other school in the land.

In closing their report, the committee with profound regret announced the resignation of the undersigned, and the contemplated removal from the

Abner J. Phipps, Esq., for three years the superintendent of Public Schools and the secretary of the committee. They feel that the educational department of the city has met with a great loss. The scholarship and culture of Mr. Phipps have been invaluable to our schools, while his uniform courtesy and geniality, his scrupulous faithfulness, fairness and impartiality, his untiring industry, his zeal in educational matters and his intelligent interest in the city at large and its general welfare, have earned alike our confidence, our gratitude and our esteem. Our warmest wishes will follow him to the new pursuit in which he has been induced to engage, and we, in common with thousands of our citizens, shall ever be gratified to hear of his happiness and prosperity.

Chairman.—JOHN A. GOODWIN.

1826 and 1866 Contrasted.—The present year is the last in the fourth decade of the municipal existence of Lowell. The history of its schools for these forty years will form one of the most interesting and important chapters in the annals of its future historian. I shall very briefly touch upon one or two points of contrast between “then and now.” Appended to the first annual report for 1826, are the names of two of our citizens whose daily presence among us still is a constant reminder of their long-continued and faithful services in the cause of popular education. I need not say that I refer to Rev. Dr. Edson and Dr. Green, for whom two of our Grammar Schools are named. In that report they gave it as “their opinion that good schools cannot be supported for a sufficient length of time in the several districts with a less sum than was raised the last year (1826,) viz.: one thousand dollars.” The amount expended for the support of our schools for 1866, for all purposes, was \$71,893.35, and a larger amount will be required for the coming year.

There was then a population of two thousand three hundred; it now probably, falls but little short of forty thousand. Then there were six small district schools, kept for the most part only a few months in the year, and taught by six teachers, to meet the wants of three hundred and fifty school children; now we have a High School, eight Grammar and forty-eight Primary Schools, kept through the whole year, and taught by ninety-eight teachers, to meet the wants of six thousand children between the ages of five and fifteen years, as reported by the assessors, and about three hundred others, over fifteen years of age attending our schools. Six years later than this, in 1832, the committee on school-houses in a report to the town stated that the town, with a population exceeding ten thousand “does not yet own a school-house.” The estimated value of all the school buildings now owned by the city is nearly two hundred thousand dollars.

These facts, and others like them which might be cited, show that the growth of this city and its prosperity in industrial and mechanical pursuits have been surpassed only by a few cities in remote parts of the Union, the citizens can with equal pride point to abundant proofs of the enlightened and generous regard for public education which has marked its history during the brief period embraced in this contrast.

Employment of Children in Manufacturing Establishments.—It is as one of the most important subjects to which the attention of the community interested in the proper education of our youth can be directed. In my last annual report I stated that I had reason to believe that the wise and salutary provisions of the statute for the instruction of every child in the Commonwealth under fifteen years of age were repeatedly violated by overseers and other subordinate officials connected with several corporations in our city, and that by thus illegally employing children to work in the mills, they not only did these children a great wrong by defrauding them of an education, but also rendered their employers liable to the prescribed legal penalties.

I would respectfully and earnestly recommend that this board institute such measures as shall lead our most worthy chief magistrate, who as chairman of the State Board of Education is presumed to feel an interest in this subject, in accordance with the provision of chap. 273, sect. 5, of 1866, "to instruct the constable of the Commonwealth and his deputies to enforce the provisions of all the above laws regulating the employment of children in manufacturing establishments, and to prosecute all violators of the same." And I would suggest that if the State constabulary is so engrossed with the duty of enforcing the observance of some laws, so constantly violated in our city as to leave them no time for other service, that several of our teachers can furnish them with all the information on the subject as the basis for any legal action they may be disposed to institute.

Employment of Special Teachers.—From the last report of the Board of Education it appears that in many of the cities of Massachusetts Private Schools are very flourishing, and a large amount is yearly expended for the education there sought. Salem is reported as having, in 1881, thirty-six Private Schools, in support of which was expended \$18,000; Cambridge twenty-two, at an expense of \$20,735; Springfield twenty-eight, \$8,000, and New Bedford sixteen, at about \$6,000. The number of such schools in Lowell, for the same period is reported as eight, and the amount expended upon them \$3,500. There are few cities in New England where the number of first class Private Schools is so small as with us, and the only way to perpetuate this characteristic of our city is to make such provision in the Public Schools as will meet, within reasonable limitations, all the educational wants of our children. If we would have

citizens continue to send their children to the Public Schools, as they now do with so few exceptions, then these schools must afford all the advantages which the best Private Schools offer to those who patronize them. Hence the wisdom of employing teachers of special branches, whenever necessary, to meet the wants of pupils in our higher grades of schools. Our legislators, appreciating the importance of this subject, to remove the obstacles which in certain cities were interposed by aristocratic parties who had little sympathy for free public education, in 1859 legalized the employment of teachers of certain specified branches not before recognized in the legal requirement, such as vocal music, drawing, etc., by authorizing school committees to act according to their discretion in the matter. I need not say that the employment of such special teachers, when the regular teachers are unable to give the needed instruction, tends to increase the aggregate of expenditure for the support of schools, but I believe that the sum thus expended is a good investment, and that its results, present and future, are not to be estimated by the slight addition thereby made to the taxes of our citizens. In respect to this and other school expenditures, it is more frequently the case that those who pay merely a poll tax, or have it paid by others, complain much more than those who pay the largest taxes. The salaries of the three teachers of vocal music, drawing, and penmanship, whose instructions are confined to the High and Grammar Schools,—that of the teacher of drawing, exclusively to the High,—amount to \$3,400 for a year. This divided by 2,083,—the average number belonging to these schools and who have received the benefit of instruction in these branches, makes the cost for each pupil at the rate of \$1.63 for a school-year of forty-four weeks, or *less than FOUR CENTS for each week*. Could similar instruction be obtained at a first class Private School, if parents had to resort to one for it, at so small an expense?

In my last annual report I spoke of the ungraded character of our Primary Schools as, in my opinion, the greatest obstacle in the way of their more thorough and satisfactory improvement. We had then forty-six schools entirely independent of each other, in each of which were found children, formed into six classes, ranging through the studies of the first five or six years of their education, from the alphabet to a somewhat advanced portion of Mental Arithmetic and Geography, until they were prepared for the Grammar School. My recommendation in regard to a better classification of these schools was at once adopted by the board, and permission was given to the several sub-committees to grade their schools agreeably to my suggestions. With a single exception, the sub-committees have all done so, as far as was practicable.

In most of the changes thus made, where there were two schools in the same building, the three highest classes in both have been assigned to one

teacher, and the three lowest to the other. In a few instances where there were three schools in the same building, or near each other, a better substitution has been made of the six classes heretofore in each, by so uniting them as to give only two classes to each teacher. The benefits of such a reorganization are already very perceptible. The power of the teacher to give instruction to the same number of children, to interest them in their studies, and to secure good order, by thus reducing the number of classes from six to three, is more than doubled. Under the old system there was a very strong temptation to give an undue proportion of time to the highest class, as this was the one to be publicly exhibited at the semi-annual meeting of parents and friends, and to be sent to the Grammar School. Not unfrequently the lower classes were sadly neglected. Several teachers have assured me that under the present arrangement, their pupils, especially the lower ones, have in one term made as much progress as they formally did in two terms, and my own observation confirms their statement.

Having in my previous reports made some strictures upon the curriculum prescribed for Grammar Schools, and suggested some modifications and enlargement of these studies to meet the wants of the large proportion of the youth of our city who cannot, for various reasons, enjoy the advantages of the High School, I did not intend to introduce the subject in this report. I have, however, just read some remarks made by B. Emerson, LL.D., of Boston, at a recent meeting of the Boston Science Association, of which he is president, which, in the most forcible manner fully express my own convictions on the subjects referred to, that in concluding what I have to say about our Grammar Schools, I cannot refrain from introducing a portion of them in this connection. Though his remarks were made with particular reference to the Boston schools, they seem to me very applicable to our own; and as expressing the views of one whose whole life has been devoted to the interests of education, they are deserving of thoughtful consideration.

“Are the studies pursued in the Grammar Schools what they should be? Is the great fact that for nearly all the children of the city the Grammar Schools furnish all the school education they can ever possibly receive sufficiently regarded?

“Almost every girl is by nature destined to be a nurse, a mother, and manager of young children. Do all the girls receive in the Grammar Schools all the helps which they might receive towards performing bravely and intelligently the duties which belong to those several relations? Does not every girl to obtain, before she leaves school, some knowledge of the laws of health, some of the great and all-important truths taught in the science of physiology?

"Might not all be taught these great truths? I say not by means of text-books, but by the incomparably more effectual means of good oral instruction? Ought a girl to be allowed to leave one of the best schools in the world without any special preparation for the highest and most important duties of her future life?

"Ought we to consider these schools as what they ought to be, unless boys and girls are taught,—what every decently educated person ought to know,—what air is, what are its uses, properties and laws? What water is? What heat and light are, and how they act upon air and water and upon all forms of animal and vegetable life? Ought not every one to be taught what his own body is and what it is made of? What food is and how it nourishes the body? Ought not these all-important elements of chemistry to be taught in every Grammar School? I say not by text-books, but by some better means? Ought not chemical lectures with suitable experiments to be given in all the Grammar Schools?

"Childhood is the time of life during which the meaning of words is most easily learnt, and when all those words ought to be learnt which are essential to reading intelligently the best books. The names of the elementary substances are now an essential part of the language. Most books upon agriculture, upon the nourishment of plants and animals, upon mines and mining, upon volcanoes, upon coal, upon rocks and soils, upon precious stones and building stones, upon geology and mineralogy, upon metals for roofing and for sheathing, upon working metals, upon alloying and coining, upon smoke and steam and clouds and gases, upon dyeing and tanning, upon brewing and distilling, making cider and vinegar, upon soap-making and upon ventilation, and a multitude of other processes and arts, are unintelligible to a person ignorant of the meaning of these words.

"Very many of the boys, whose highest and last education is to be given at these Grammar Schools, are destined to the mechanic arts. Should they not in these schools make some preparation for their vocation in life? Ought they not to be taught the elements of mechanics, the mechanical powers, how the inclined plane, how wedges and levers and wheels and pulleys and ropes act? Ought they not to be shown what a steam-engine is, what pumps are, what the hydraulic press is, and how they act? Ought not these elements of the useful sciences to be taught? Might there not be also taught the properties, the strength and hardness and uses of wood and iron and the other metals and of stones?

"How delightful would these studies be to teachers and pupils! How incomparably more valuable as furnishing real knowledge, materials for thought and power of observation, than so much of English grammar, of arithmetic and of reading! How shall the time be found for these additional studies?—say, rather, for these delightful recreations? The time is already found by the precious improvements in grading. Still more may

be found by shortening that which is now given to arithmetic, to and spelling and to English grammar. The arrangements made for teaching mental arithmetic and ready reckoning in the Primary Schools and the lower classes in the Grammar Schools, are very valuable. But the time now given to arithmetic in the higher classes is time wasted. It does not prepare for the duties and offices of life. It does not improve the judgment nor improve the taste. As to the idea that difficult operations in arithmetic are a valuable exercise of the mind, the fact that a calculating machine will perform some of the most difficult operations and give the results, in less time than it will take the most skilful reckoner to work through them once, gives us somewhat of an answer. If the doing of what a machine will do better is a valuable exercise for the mind, then working out of difficult operations in arithmetic is a valuable exercise.

"No one can think more highly than I do of the value of the power of reading and the beauty of the art of reading. No one rejoices more in the improvements now making in our schools in the management and cultivation of the voice. No one can admire more the series of readings used in the schools. They are beautiful selections from the best prose and poetry of the language. But they are luxuries. They do not prepare the materials and the preparation for the labors, the relations, the duties and exigencies of common every-day life which ought to be given in the schools which are not only the schools but the only academies and colleges that most of the hard working men will ever have access to. These schools ought to enlarge the practical resources of the laboring man, to lighten his daily work, so that he may make his work easier and better and more cheerfully.

"No doubt the art of reading well, so far as utterance and voice are concerned, is successfully taught in these schools. Is a love of reading cultivated? Are children taught to read wisely and made to rejoice in reading? Valuable libraries accessible to everybody are found in the schools. Are the schools prepare the children in the best manner to use and enjoy these libraries? Are pains taken to form habits of reading good books? of proper reading subjects?

"Is history taught in the best manner? This question is suggested by the fact that in some of the schools children are even now allowed to be compelled—to commit to memory the words of pages of World's History.

"Can a more absurd mode of teaching be devised? Can it have any other effect than to disgust the pupil and make the thought of reading disagreeable?

"If it is desirable to cultivate verbal memory, as I think it is, then in our language tens of thousands of lines of the most beautiful poetry in the world to exercise the memory upon. And there are few more

treasures to carry away from school than hundreds of lines of the loftiest and most exquisite English poetry. .

"Might not means a thousand times more pleasant and more profitable be devised for teaching history? History is a vast study. Very little of it can be taught at school. The best thing that can be done is to show how it ought to be pursued, and how interesting, valuable and delightful the study really is.

"With the great ability of the masters of the Grammar Schools, might not a most pleasant and useful set of familiar lectures or talks be devised, each gentleman taking a favorite period of history, and giving his lectures in succession to several of the schools, or having pupils from several of the schools meet together to listen to him? so that all the pupils might have the benefit of all his lectures."

Superintendent.—ABNER J. PHIPPS.

MALDEN.

Discipline.—It is believed that the discipline in the schools of Malden is of a character which must meet with general approbation from our citizens. It is true, we occasionally hear complaints of harsh treatment of a pupil on the part of the teacher, but such complaints are rare, and when made, in a majority of instances it is found upon examination that they are without sufficient cause to require any interference on the part of the committee. The pupils generally are governed without resort to the rod. It is well understood by the teachers, that, other things being equal, we regard those instructors the most successful who have the least occasion to use corporal punishment. The discipline of the school-room must be exact, it is true; but in these days of progress—progress in the teacher's art, as well as in all others, experience has shown that corporal punishment, except in rare instances, is not a necessity in the school-room. In fact it is already admitted by the best authorities that in really excellent schools punishment with the rod is comparatively unknown.

Gradation.—As the schools are now graded, three years complete the Primary and five the Grammar course. It may be doubted whether any better division than this is practicable. The present arrangement is the result of careful comparison and of experience, and is quite satisfactory to the committee.

We cannot fail here to protest against the plan of erecting small school-houses in different parts of the town. Except in extraordinary instances of neighborhoods very remote from the main body of population, this is entirely unnecessary. A central building containing several schools under the management of an efficient master, permits an excellence in gradation which is quite impossible where classes are small and the small school-

houses are scattered among a sparse population. We trust that no desire on the part of a few families to have school accommodations near their residences, will induce the town to permit the erection of buildings which every one familiar with the best methods of gradation and school management knows is prejudicial to the interests of education in the town.

School Committee.—GEO. W. COPELAND, G. D. B. BLANCHARD, W. H. RICHARDSON, JOHN W. CHAPMAN, FREEMAN A. SMITH, GEO. P. COX, ALBERT F. SARGENT, D. M. BEAN.

MELROSE.

School Studies.—Many are endeavoring to solve the great problem, what studies to take up, and what amount of each to require. Recalling the days and weeks devoted to matters, every particle of which has faded from the memory, one cannot help questioning the value of many studies as at present pursued.

We know it is said that as the body is strengthened by exercise, so is the mind, even if the study in itself is of no consequence. Having visible results in one case, we should conclude the other equally beneficial. But we have evidence that the weak cannot only be made strong by physical culture, but, as in the case of a Dr. Winship, be made even to excel in strength. Have we in our schools any system of mental training which can raise a pupil equally high above his fellows? Physical culture, within certain limits, will always produce certain results. Have we any intellectual method equally reliable? Is the head of his class the most vigorous thinker, the most active investigator, or the leading designer and producer?

As committees are constituted they do not make education a specialty, and other pursuits prevent the devotion of time needed to understand the wants and remedy the defects of our schools. Teachers, as a rule, follow the beaten track. Both realize that the memory alone is often cultivated, and that many a recitation might as well be in an unknown language, as far as any thought is aroused, or any principle made clearer.

The election of a superintendent, whose sole employment is to visit his schools, grade them, securing unity of action and positive results, seems to us the beginning of better days. Experience will demonstrate what is needed, what the young, growing mind is capable of grasping, and the best method of reaching the desired end. Our own town, like many others, needs such a leader for the guidance of its schools, more important than the appointment of a foreman to superintend a factory.

What we need in every department is more oral instruction, more illustration and explanation. We need to arouse and cultivate thought. Curiosity should be stimulated, or at least kept alive, and the eyes and ears be opened, that all around the scholar may teach him lessons of practical

value. Music and drawing should be added to the list of school requirements, not only as accomplishments but as lessons that educate the organs of hearing and seeing, and come almost under the head of recreations, if attractively taught.

School Committee.—CHARLES H. ISHBURGH, T. W. CHADBOURNE, G. N. NOYES, GEORGE EMERSON, 2d, G. A. MANSFIELD.

NATICK.

School Government.—The cases of imperfect success in some of our schools the past year have arisen rather from failures in the discipline and government, than in imparting instruction. Indeed, the government and discipline of a school make greater demands on the head and heart of the instructor than the mere teaching. The number whose ability is ample to conduct a recitation is large, but the number who can govern well and discipline wisely is comparatively small. The defects in the order of the school-room, and in the general conduct of the scholars, are perhaps as often to be attributed to the weakness and incapacity of the teacher as to the perverseness and insubordination of the scholars. Any person may have demonstration of this by observing how a school appears under the charge of a first-class teacher and disciplinarian, and how its aspect is changed when an inferior teacher is placed at its head.

Good order is essential to a successful school. When this, with a proper attention to study, can be secured under the influence of moral motives, it is a reason for gratification. These motives should be employed in the first instance. But where moral forces are inadequate to accomplish the desired end, then resort must be had to penal suffering. The child that cannot be persuaded to do his duty through gentle solicitations of affection, should be made to by the stern application of the rod. Children should early be taught the lesson of obedience, the cheerful submission of their wills to the will of those who are their superiors in wisdom and authority. And where insubordination is determined and persistent, then they should be treated as little rebels in arms, and compelled to yield. In nothing do teachers differ more than in their power to govern. With some it seems to be a natural gift. In their presence, at once, and apparently with but little effort, order comes out of disorder, and the most unruly submit with scarcely a moment's hesitation. If we analyze the elements of this power, we shall find them to be perfect self-control, exhibiting itself in a calm but decided *mein*, a consciousness of rectitude, and a firm determination to be master of the situation. Others endeavor to govern, but lose half their power, because they are petulant and irritable, and have no mastery over their words and actions. It is a fortunate circumstance for a school when it has a teacher of the first class

were described. Little resort need be had in such a school to corporal punishment. The quiet but firm tone of the voice, the mild yet deep look of the eye, and the gentle smile, are generally enough to subdue the most reckless, and diffuse in all directions the spirit of willing acquiescence to lawful authority. There is no more essential qualification of a disciplinarian than a knowledge of human nature, and of the means and motives by which the young may be influenced, and a power of self-control as the first requisite for controlling others.

The District System and Prudential Committees.—This town retains the district system in the management of its schools. Under this system the prudential committees of the several districts select the teachers. It has long been the prevailing opinion of the best friends of education, that it is not the best system, and ought to be abolished. The evils and defects have been set forth by every Secretary of the Board of Education, from Horace Mann down to the present Secretary. It is an unquestionable fact that the best schools are found where this system does not exist. The whole tendency of our educational legislation is to encourage its continuance. The selection of teachers by prudential committees relieves the school committee of much responsibility, yet it is selected with reference to their supposed ability for judging of teachers' qualifications, and as they have to examine them in respect to their moral character, it would seem far better that the duty of contracting with teachers should be assigned to them. Yet personally, as members of the school committee, we should prefer not to have this responsible duty assigned to them.

For several years past the prudential committees of the several districts have been judicious men, who have been careful in the selection of their teachers, and have consulted and co-operated with the superintending committee. In several districts, the evils of frequent change have been obviated by the re-election of the same prudential committee from year to year. No conflict of authority such as is always liable under the district system to occur between the district and town committees, has recently taken place; and we believe that in all the districts the prudential committees have done what they could to aid the superintending committee in making the schools what they should be. And yet, though we are experiencing the worst evils incident to the system, we can easily see how we might have made the schools better, if the whole power had been placed in our own hands. A teacher may be qualified to succeed in one school, and would fail in a different school. Two teachers may be selected from the same men, each of whom has but one school to provide for, and both, from want of adaptation to their schools, may fail; whereas, if the matter were in the hands of the town's committee, they might place each in the school in which they were adapted, and both might succeed.

For the Committee.—HORATIO ALGER.

NEWTON.

Primary Schools.—Perhaps in no grade of our schools is there such a wide difference in the results attained, as in the Primary. This is due chiefly, we think, to two causes, one of which cannot be directly avoided, while the other ought to be remedied.

The first cause is the difference in the character of the pupils, the home and outside influences under which they are brought up. This is more noticeable in the Primary than in the other grades. As we improve the rising generation, we shall, of course, improve the character of those who will follow them. In this way the character of our schools will improve in time.

The second cause is the difference in the instruction in the school-room. Most, if not all the teachers in our higher grades, are professional teachers, while the theory and art of teaching Primary Schools is not sufficiently studied. It does not necessarily follow that, because a person has superior literary attainments, he or she is capable to teach school, much less a Primary School.

As the times change, the methods of instruction change. Formerly it was enough that the younger children went to the same school as their elder brothers and sisters, where the teacher, a college student perhaps, or one hired for his strength, would spend from three to five minutes twice a day, in hearing them in the alphabet until they became advanced enough to read.

After a time, the schools in the larger towns were graded and the pupils classified, and the leading educators discussed methods of teaching and governing schools, leading to the establishment of Normal Schools. Now, those of our teachers, especially in our Primary Schools, who have had the benefit of a course in a Normal School, or a Training School, like the excellent one of Miss Stickney, in Boston, have a very decided advantage over those who have simply had the benefit of a Common or High School course, where literary excellence is the main object sought. We have in one of our Sub-Primaries a teacher educated in the "Training School" previously referred to, and in one of our Primaries a lady educated in a Normal School, and we take great pleasure in speaking of these schools as good samples of those systems.

Our Primary teachers must make their profession a study, as well as our High School teachers. The moment they sit back satisfied with their own attainments, and feel that their ways of teaching are the best, beyond which there can be or need be no improvement, that moment they begin to deteriorate; they lose what popularity they might once have attained, and soon they drop from the ranks and their places are supplied by more enthusiastic teachers.

The younger the age of the children, the more there is for the teacher to do. Young children's minds are not easily kept upon one thing for a long length of time, either in study, recitation or play. They must go from one thing to another frequently; and if the teacher does not strive to keep them busy about something useful, they will be pretty sure to find mischief to busy themselves about. They need, too, constant change in their positions. If their teacher does not exercise their limbs in some kind of gymnastics, you will be very likely to find some of their fingers extended to ascertain how far it is to their next neighbor's hair. Children should not be left long on their own resources, for, those failing to keep their minds in the right channel, they will get into what we call mischief and they call fun.

Sub-Committee.—HORATIO F. ALLEN, JOHN A. GOULD, ISAAC HAGAR.

PEPPERELL.

Your committee believe that this town, and all the towns of the county, have better schools than they had twenty years ago; and better, especially in this respect, that there is an effort, at least, not only to load young memories, but to unfold and discipline youthful powers. This is progress in the right direction. We want more of it,—more and more awakening of real intelligence in the pupil's mind.

We do not believe it admits of denial that there is in our community a sad lack of intelligent interest in the subject of education. It was to remedy this evil, and partly to benefit our present school-teachers, that the offer of the Secretary of the Board of Education to grant a teachers' institute in this town last spring, was accepted. The institute was a success, and the influence it had upon those teachers who attended has been apparent. How could it fail to inspire them, as it inspired them with a sense of the dignity of their profession? If such exercises were enjoyed here did not quicken their minds and kindle their affections, they must be dull indeed. And we hope the teachers' institute did something towards magnifying the teacher's office in the eyes of the community. His or her work is not mere routine, but rather something calling for high and broad culture. The various exercises were well calculated to impress upon the minds of our citizens a truth we should never lose sight of, that it takes all our learning and effort to give clear and simple instruction.

School Committee.—W. P. MACK, ELLERY C. CLARKE.

READING.

As of other studies, it may be remarked of grammar,—there has been in the past few years an increased interest manifested by both teacher and pupil, and the past year is no exception to the general rule. It is pro-

owing in a great measure to the improved method of teaching this study. It was formerly the practice to confine the scholars, term after term, to the text-book, merely learning the rules and principles one term—to be forgotten before the next—without once applying them to any practical use. No rule or principle of grammar should ever be given to a scholar without being accompanied with a practical application of it to the language. This practice divests the subject of all mystery and dread, and shows the pupil how much grammar enters into all the exercises in the school, and deals in some degree with every recitation; and if he is attentive his mind becomes interested and open to instruction.

Discipline—in all our schools has been such as meets the approval of the committee. There have been a few cases of insubordination on the part of the scholars, which have required the attention of the committee, but nothing has occurred to materially interrupt the usual progress of any of the schools. The government of the school is one of the most difficult parts of the teacher's duty. It requires constant attention to hold the school under proper regulation, without at times meeting with some one of those troubles which so often have, in times past, entirely destroyed the usefulness of a whole term of school. The teacher does not perform her whole duty when she alone cultivates the intellectual powers of the pupils. She has at the same time the culture of the heart—the development of the entire moral nature of the child, to a greater or less extent, in her hands. The duty of the teacher was set forth by the noblest of sages, when he says:—"The true government of a nation must begin with the education of the child, and it is far higher and better to form men to be virtuous citizens and enlightened rulers, than to be one's self the chief of the state."

In the school-room a silent moral power ought to reign, rather than ostentatious and vindictive measures. Its influence is more happy, effective and permanent. The true government of a school is like that of a wisely regulated State, and consists in the prevention rather than the punishment of offences.

Dismission.—The early and frequent dismissal of scholars before the close of the school, is a serious evil to the schools of this town. As an example of the extent to which it is carried in some schools, one of the committee visited a Grammar School one afternoon just as recess was over, and was surprised to notice the number of vacant seats. Upon inquiring for the cause, the teacher informed him that the scholars had been dismissed at the request of the parents, and showed a number of written requests from them for dismissing the scholars before the close of the school. This irregularity of attendance on the part of the scholars often accounts for the low standard of a school, in no small degree.

School Committee.—HIRAM BARRUS, HORACE P. WAKEFIELD, BENJ. M. HARTSHORN.

SHERBORN.

Your committee feel called upon to meet some of the objections which have been commonly urged against the abolition of the district system. First, it is said that such a course would throw too much power into the hands of the general committee. Perhaps the objection is well founded, but there is always an effectual remedy in the hands of the town. A town is permitted by law to elect any number of school committee members by three. If they do not feel satisfied with acts of any committee they can, at any annual meeting, add to the board a sufficient number of members to control their action. Thus any town in which there are three members of the board, may add six to that number, and divide the town into six districts, so that each district shall be adequately represented. Such a plan has been in successful operation in the town of Sherborn for several years. It obviously secures all the advantages of the present system, while avoiding its disadvantages.

A second objection, which at first view seems very plausible, is that some of the districts have built new school-houses, while others have not. The inhabitants of the districts having new houses argue that they are obliged under the new system to help build houses in those parts of the town which have not as yet taken action upon this subject, while they have previously borne the burden in their own districts.

This objection is met by the provision of law that when towns divide their school districts and take possession of the property several years ago, such property shall be appraised under the direction of the board, and at the next annual assessment thereafter a tax shall be levied on the whole town equal to the amount of such appraisal; and then the same shall be apportioned to the tax-payers of each district the said appraised value of the property thus taken. In order to avoid the slightest ground for complaint in such cases, it is further provided that the difference in value of the property of the several districts may be adjusted in any other manner agreed upon by the interested parties.

These are the chief objections urged against the several towns giving up the whole control of their schools. It appears that they rest upon no solid foundation. Each district may, if the town so desire it, be represented on the board of school committee, and each member may act as a representative of the committee for the district to which he belongs. In this way co-operation is secured between different parts of the same town, thus obviating the danger, which is liable to arise under the present system, of a conflict of authority. Moreover, every district is secured by the provisions of the law in its just rights, and there would therefore be no legitimate cause of complaint that any party had been taxed beyond its proportion for the maintenance of the Public Schools.

Corporal Punishment.—The subject of corporal punishment in our schools has been much discussed of late in some quarters, and while nothing has occurred among ourselves to direct attention to it at this time, yet we deem it proper to give it a passing word. Your committee have no delight in any kind of punishment. It seems to them an unpleasant work, and to be inflicted only when good government cannot be secured in any other way. But they regard it as sometimes necessary, and they can see no good reason why corporal punishment should be prohibited in the family or school. In their opinion it should not be given up but held as a "reserved force," to be used only when necessary to restrain from wrongdoing and to preserve respect for law. This kind of punishment should never become frequent in the school. When this is the case it loses its efficacy and exerts a hardening influence upon the scholars. Let not the right to inflict such punishment be surrendered, but let it be reserved for extreme cases.

School Committee.—EDMUND DOWSE, WILLIAM BROWN, A. H. BLANCHARD.

SHIRLEY.

In infancy and early childhood the body more than the mind requires strengthening. Erect your house before you put your furniture in. At what age children should be put to mental exertion, be sent to school, cannot be definitely stated. There is an inequality in this particular. Much depends on vital stamina,—physical development far more than on mental manifestations. Precocity of intellect is not usually indicative of longevity or greatness of intellectual power in manhood. The cultivation of the mind should be kept subordinate to the cultivation of the body, if we would expect soundness of either to be retained. If too early and too great strain be made on the former, the latter must suffer in equal proportion. The mind at birth is little if any more than a blank. Some act as though this blank could be acted upon with the power of a Hoe's steam-power press—that impressions could not be made upon it too rapidly. It is all wrong; the curb more than the spur is needed in early childhood. Put on the brakes, not the steam; send not your children to school at too tender an age. Let them skip and play, grovel in the dirt rather than weary and pine in the school-room; and for the first few years of attendance at school, let them be confined there but a short time daily. By adopting such a course, the tenement may not suffer from too early mental application, but remain unimpaired and fit to be furnished and adorned in maturer life.

We are decidedly of the opinion that scholars are required or allowed frequently to pursue too many studies at a time. It is not uncommon to find in our schools those who have a daily exercise in reading, spelling,

writing, arithmetic (perhaps both oral and written,) geography, and even other branches. Is there not too much, too frequent change required? Is not the tendency to confuse the mind? Does it lead to the cultivation of the memory far more than the reflective and reasoning faculties? In the higher institutions of learning not so many subjects are carried along at once as the average pursued by the senior members of our Common Schools. It was said of the great Napoleon, that he dictated to three amanuenses upon different subjects at the same time; but all are not Napoleons. We cannot divest ourselves of the belief that diverting a child's attention too frequently from one to another tends to intellectual confusion; to a want of clear, deep thought of them. They simply commit to memory, store away statements without fully appreciating or comprehending the ideas. It is an indiscriminate loading of the intellectual car with assorted merchandise with no outlet for local distribution.

School Committee.—H. A. WADSWORTH, JAMES O. PARKER, SETH CHASE.

SOUTH READING.

Until within a few years past, it was the custom of the school committee of this town, as it still is in some places at present, to give a partial description of each school and teacher, pointing out the defects and excellences of each. In carrying out this plan, we are perpetrating an injustice is often done to certain teachers, who, for want of proper preparation,—or from some peculiar construction of the school, or from other unfortunate circumstances,—utterly fail in some particular, while in other places they may have been entirely successful, and may again succeed in some other town or district, if permitted to have a fair trial. A failure of a single year, or perhaps of a single term, may ruin their professional prospects for life, while that failure may be wholly attributable to causes beyond their control, and would, with equal justice, have awaited the majority of teachers, however competent. No teacher is without faults—as who has not?—it is unpleasant as well as unprofitable to publish those faults to the public, blasting future prospects and creating feelings of unkindness in the minds of a large circle of interested persons.

School as a Home.—The school-room should be made attractive and resemble as near as possible a well-conducted and happy home. The child should be led to feel that it is a privilege to attend school, and that in every recitation he is deprived of subjects him to a personal interest. It is not an error to send children to school as a punishment, and permit them to remain at home for well doing? Listen to language like the following: "Mother, I want to stay away from school to-day; may I?" "No, my child?" Because I don't love to go to school all the time.

is not economical, it is not decent, nor is it Christian to seek to save a large sum.

Studies.—If what we have indicated about the teachers is to be true, it would be expected that good progress has been made in all schools. Such is the fact, and the fact verifies our former remarks. We have ceased to see that thoroughness has characterized the teaching in the schools. We encourage this at the expense of speed, if need be. It appeared to us that more attention to one branch in our Intermediate schools might be given with advantage, and that is, writing. A larger number of candidates were admitted to the Grammar department than usual, because the first class in each of the three Intermediate classes was larger and more equally advanced than usual. In the review of the more elementary branches in the High School, such as arithmetic, geometry, and history, it has been decided that a more thoroughness should be adopted. We are most decided and emphatic in the belief that no amount of progress in the higher course, as Latin, French, German, mental philosophy, can make up for the lack of the first part of an English education. "These things ought ye to have done, and then shall ye leave the other undone." Indeed, it is essential that a scholar have made pretty extensive acquirements before being entitled to a diploma, but the common English branches must always be the foremost in our system.

School Committees.—LYMAN DIKE, JOHN HILL, R. B. DANFORTH, L. S. BOWEN, M. L. MORSE.

STOW.

More Enthusiasm.—Our system is good, but it will not operate unless it needs vigorous effort to make a good system bring forth abundant results. The assertion of the inspired penman, "It is good to be zealous in every way in a good thing," is as applicable in education as in religion, especially so as education is said to be "the hand-maid of religion." Such of the character and happiness of man depends upon the cultivation of the mind, cannot be doubted. "The mind is the man." It is as Locke declares, like a blank sheet of paper, or a chest of drawers, containing as innate ideas as well as capacities for receiving truth. Education gives these ideas form, and develop all the faculties for the reception of knowledge. If this work does not receive proper attention in youth, the effects of the neglect will be seen in manhood. This fact should excite all parents with zeal in the education of their children. "The education of our children," said John Adams, in a letter to his wife, "is never too early mind. Train them to virtue, habituate them to industry, activity, and spirit. Make them consider every vice as shameful and unmanly. Make them with ambition to be useful. Make them to disdain to be dependent."

eful knowledge." Such a sense of obligation as this will lead to
et judicious and faithful training of the young. Let the citizens of
own drink in the same spirit, and feel the same enthusiasm prompting
ful effort.

ing.—More time and care should be given to this branch of educa-
Once or twice a week, one half-hour at a time, is about the extent
tice had in most schools. In some cases it is left to writing teachers,
an do little by one course of lessons a year, towards perfecting any
the art. In epistolary correspondence, the ability to write a neat,
graceful hand is much to be coveted. Book-keeping has become a
t vocation, not so much because the system is difficult, but because
re so few persons who can do good execution with the pen. Every
, especially if he has enjoyed the benefits of a High School, should
e to write sufficiently well to transact any business.

ents.—We take this opportunity of saying a few words, which are
ed by parents. Will you hear us?

discipline of a school is of the first importance. Your house may
comfortable and attractive; your books and apparatus may be perfect;
structor, master of every branch to be taught in school; yet, with-
discipline, nothing will be accomplished. Most teachers can govern a
if they have the co-operation of parents; few can govern successfully
t it. Teachers are often embarrassed by the interference of
s; or if they do not personally interfere, they sympathize with their
n, and prejudice them against the teacher. Parents often go to the
house, and break in upon the teacher's duties, and give her a lecture;
t her in the street with threats and fault-finding. It is easy for a
r to subdue an unruly scholar in the school-room, but it is a difficult
o meet and reconcile outside elements. Many parents cannot gov-
ir children at home, much less at school. Leave it for the teacher
here. Under no circumstances go to the teacher with complaints.
ust have the right to choose her own method of government, and
r own penalty for disobedience. If she is too severe, the general
tee are the proper persons to take the matter in hand. A teacher
much right to enter your home and dictate you in domestic matters,
a have to enter the school-house and interfere with her business.
duty is to co-operate with the teacher. If you are true to your obli-
s as parents, and your children receive correction at school, they will
e a second chastisement at home. We sincerely hope, for the good
dren and our schools, parents will heed this advice.

ication, to be a source of greatest good, must be attended with
e.—We deem it important to "stir up your pure minds by way of
embrance" on this subject. It is to this end that the statutes require
daily reading of some portion of the Bible in school, and that

teachers be employed who can furnish satisfactory evidence of character." "Knowledge alone is not sufficient. It is, indeed, if undirected by virtue, knowledge is but the servant of vice, only to evil." It were better for a person to be ignorant of learning than having a knowledge, employ it in evil. Man has in him the seeds of greatness. If they are perverted, he becomes great in wickedness; if cultivated in knowledge and virtue, great in goodness. The greatest man our country ever reared,—he whose brain-power has been surpassed by only one in the history of our race, once said, "A solemn and reverent regard for spiritual and eternal things, is an indispensable element of true greatness." Such a regard for these things as will mould character and develop the higher and nobler faculties of the mind will lead to greatness. It was said by Locke, that a teacher should be one "who thinks Latin and the languages the least part of education; one who, knowing how much virtue and a well-tempered mind to be preferred to any sort of learning or language, makes it his business to form the mind of his scholars, and give that a right direction, which, if once got, though all the rest should be neglected, would in time produce all the rest; and which if not got, and settled so as to get rid of all ill and vicious habits, languages and sciences and all the other accomplishments of education will be to no purpose, but to make the scholar a more dangerous man." Reason, observation, and history confirm these statements; and as parents desire the highest good of their children, they should aid the teacher in laying the sure foundation for "true greatness." Indeed, parents should feel themselves wholly responsible for the foundation, while the teacher's duty should be confined to the development of character and knowledge.

School Committee.—W. J. HAMBLTON, E. WHITNEY.

TEWKSBURY.

Method of Instruction.—We are deeply convinced that too much uselessness is made in our schools for the time and labor employed. A common reason for this is in the improper method of instruction so commonly used,—we mean that of putting dry, abstract terms before the pupils, and then relating them to the things to which they relate, teaching words apart from the things they stand for, and requiring definitions of pupils before they have a knowledge of the objects defined. Just the reverse of this is the fructuous and normal way of teaching,—that of proceeding from the concrete to the abstract, from the fact to the principle, from the object to the name. The all-wise Creator first showed Adam the living animals, before he required him to name them. But, as has been well said, "had one of our modern schoolmasters had the supreme direction of affairs, he would have

and not as a system of senseless and barren technicalities, and is taught with much more satisfactory results.

In general, we would have teachers bear in mind that the true of instruction is not going through a monotonous, mechanical repeating of the questions, but teaching the subject; training the pupils in the use of things and not merely to repeat a form of words; and that the far as practicable, they should combine oral instruction with the text-book, so that its ideas may be learned and its principles understood.

School Committee.—RICHARD TOLMAN, GEORGE PILLBURY, JOSHUA F. M.

TOWNSEND.

Crowding.—By crowding we mean that process of hurrying through the text-books, whether they understand them or not.

We have heard of the young man who went through college too fast to get information enough to know what he went for the time. We have all heard too of children who have been through the text-books term after term, learning a little more (by rote) each time, because there was more desire to go through the text-books, even if they had to go through headlong, as one teacher expressed it, than to learn the principles. No doubt a two-forty horse that can leap ditches and fences is of much more value for many purposes than your slow and heavy beast, but your swift twelve-year-old boy or girl who can go through Greenleaf's National Arithmetic in a single term, dodging all the examples, or getting them out with the assistance of the teacher, with no knowledge of the principles involved, and then can't give the number of cubic feet in a load of wood, may reasonably doubt the efficiency of such a course, and still, if we inquire into the matter, perhaps be found that the children are not the only ones at fault in such a course. "Not how much, but how well," is a safe motto in the classroom.

School Committee.—HENRY C. BOLFE, STILLMAN HAYES, ABEL G. STEARNS.

TYNGSBOROUGH.

Reading, (including spelling,) writing and arithmetic constitute the fundamentals of education; but it is by no means to be limited to these attainments. The first makes us acquainted with the thoughts of others and good; the second gives the means of communicating thoughts; while the last is an admirable instrument for disciplining, developing and sharpening the intellect. They are the *trinoda necessitas*—the knotted necessity or requirement of education.

Tardiness.—Wilful tardiness is a modified form of truancy and should be properly punished. When it is unpremeditated, caused by weather, bad roads, or some imperative home-duty, it is an accident rather than a fault, but which the teachers are bound to record. The untimely entrance of a scholar disturbs those who are present, and interferes with the arrangements for the day. Unfortunately, the untoward consequences of a habit of tardiness are not limited to the school-room, as it tends to the growth of a feeling of indifference to punishment, and regard to the responsibilities and solemn duties of maturer years.

Burton, in his "Anatomy of Melancholy," quaintly remarks— "shoe-horn of idleness, * * * melancholy, that feral fiend on." With equal truth it may be said, by that shoe-horn of perfection is drawn on a perpetual conflict with adversity. He who fails in his business engagements, who habitually neglects his appointments, who writes his promises in water, who is guilty of the positive infirmity of never being up to time, will ultimately find to his sorrow that he has slipped the golden opportunity of a successful career like an empty vessel. He has enrolled himself in the ranks of permanent and discontented men. "Whoso doeth these things shall" ever "fail," in the objects of his life. Let parental influence be directed to the forming of habits of regularity, by example as well as by precept. Let the hearth-stone be the altar on which the youthful heart can lay its votive offerings of industry and obedience; let the home government be regular, mild, and refined, and there can be no fairer assurance that a family so governed will be daily growing in knowledge and grace; while its head shall receive commendation like that divinely accorded to the patriarch: "I will be to thee that he will command his children, and his household after him; and thou shalt keep the way of the Lord to do justice and judgment."

School Committee.—FRANCIS BRINLEY, DANIEL PARHAN, LUTHER BUTTERFIELD.

WALTHAM.

While we need not hesitate to say that our teachers generally have a worthy ambition to do their whole duty, we must admit, that in many instances, and particularly in some of our Primary Schools, there is a lack of discipline and frequently a degree of disorder quite inconsistent with the purposes of the school or the advancement of the children. It is in the Primary School that the new and untried teacher is expected to do her labors. Yet it is undoubtedly true that the government of a school of this grade is much more difficult than one of a higher character. However, it is quite desirable that children of the age of those who attend these schools should become accustomed to the proper restraint of the school-room in distinction from the freedom of the street and the

sion to misrule, or a spirit of insubordination contracted and acted in the school-room, may outweigh and cancel all that can be there gained by the acquisition of knowledge. Government must be maintained in one way or another. A failure in this not only renders impossible profitable instruction, but every hour's detention of a pupil in such a school tends to blunt his sense of propriety and to render easy and smooth the avenue to wrong. Every theory of government supposes the existence of rules, the observance of which it imperatively demands. To establish a law and require its observance, and at the same time to provide no means of coercion and no penalty for its violation, is but a mockery of government and inconsistent with every principle of government. We ought to be able to hope and trust that in these days of general intelligence and civilization it will not often occur that a child may be found willing to disgrace himself and his friends, as to be guilty of such a resistance to the rules of the school and the authority of the teacher, as would in any civilized nation authorize the infliction of corporal punishment. But after all, it must be understood by the child, as well as by the parent, who unfortunately is often inclined against right and reason to uphold and encourage the child, that the teacher is to be a teacher only and never a master. He may talk and advise and persuade, but that in no event, however refractory the pupil, is he to lay a hand upon him by way of coercion or punishment, and from that moment, at the first instance of disobedience, the teacher is powerless,—the child is the master.

In closing our report we desire to recognize our high appreciation of the interest which for a season has been committed to our charge. Not wishing immoderately to magnify our office, we yet think that the municipal position involving more important interests or more burdensome duty. It devolves upon each generation of men so to educate their children that they may faithfully and ably meet the responsibilities of citizenship. It is a duty we owe to our children, to ourselves and to our country. We fear that parents sometimes think that this great work is to be done by the committee and the teachers of our schools, and all without their active co-operation. We are always gratified at the liberal assistance afforded upon some of our public examinations, and we know with what eagerness many watch over the progress of their children. But we not infrequently have occasion to wonder at a marked indifference in a man so weighty. We sometimes meet a man, otherwise prudent, high-minded, and intelligent, yet with whom almost the last thing to be cared for appears to be the educational interest of his children. The calls of business must be met, at no matter what expense of mind or body or estate. In his farm or his garden he watches over with anxious solicitude. He waters and waters with care and skill, that by-and-by tree and plant, each according to its kind, may bear the fruit and the flower. Yet it may be

treasure of all that would lay claim to his protecting hand, finds paternal and watchful care no shelter from the dangers that are it. But "as the twig is bent the tree's inclined," and the day when he will be able to look only with a diminished pleasure at a garden of trees and shrubs and flowers, bearing in mind at the same time that other garden of his child's mind where no flowers are grown, overgrown, and it may be through his neglect or indifference, all overrun with the weeds of vice and error.

Committee.—JOSIAH RUTTER, CHAUNCEY NEWHALL, LEWIS SMITH, EMORY T. W. BANCROFT, S. B. FLAGG.

WATERTOWN.

This portion of the report seems to be the proper place for some notice of the teachers' meetings. An organization has been formed, the following constitution and by-laws have been adopted:

Constitution.—1. This body shall be known as the "Watertown Teachers' Association."

All teachers in the Public Schools of Watertown shall be considered members of the same, qualified to vote and act upon all matters properly brought before them; five members being considered a quorum for transacting business.

The members of the school committee shall be considered honorary members of the Association, and by special vote, teachers of Private Schools may become so, and be entitled to take part in its discussions and exercises.

The officers of the Association shall be a President, Vice-President, Secretary, and Treasurer, performing the usual duties of these officers.

The above officers shall be elected at the first meeting of each year.

The order of business and the literary exercises shall be regulated by the by-laws of this Association.

Any of the above articles may be amended at any regular meeting by a vote of three-fourths of all the members of the Association.

By-laws.—1. The order of business shall be as follows:—Reading the minutes of the last meeting; calling the roll of the members; reports of committees; transacting other necessary business; literary exercises and exercises.

A committee of three shall be appointed at the first meeting of each school term, whose duty it shall be to report at each meeting a list of literary exercises for the succeeding meeting.

The meetings of the Association shall be held on the second Monday of each month, providing no meeting be held during vacations.

4. The hours of meeting shall be from seven to nine, P. M.

5. The Treasurer shall be empowered to assess and collect such as may be voted for the use of the Association, assessing each half as much as each gentleman.

6. These by-laws may be amended at any regular meeting, by a two-thirds vote of the members present and voting thereon.

Much credit is due to the persevering interest which has hitherto sustained these meetings, and has now, by special organization, procured their continuance. This act of association will establish and strengthen between our teachers, such personal relations as ought to exist between those who are occupied with the same difficult pursuit; it will cherish their professional enthusiasm; it will encourage them and aid their work of self-improvement; it will enable each scholar in town to reap the benefits of the best ideas, original or derived, of all our teachers; it will give to their action and to the character of the schools, a unity otherwise unattainable.

School Committee.—A. HOSMER, D. T. HOOKER, JOSEPH CRAFTS, L. D. GEO. F. MACHAM, L. B. MORSE.

WEST CAMBRIDGE.

The school committee are in no special way the recipients of the bounty of the town, inasmuch as they share only with the rest of the fellow citizens, yet they desire to express their thanks for the liberal support which the town extends to the cause of public education. To be accurate with the generosity of the town is the duty to use the money prudently. A dollar is equally wasted, whether squandered at the end of thousands. The town should watch carefully the expenditure of the public money. It is not surprising that some suspicion of extravagance should exist where sums, large in the aggregate, are expended for purposes not fully seen nor understood by the many who have allowed the advancement of our schools. But in truth, no public body is by the nature of its duties more secure against lavish and wasteful expense than that of the school committee. Its objects of expenditure are few and distinct, and their cost settled and definite. To enumerate them: school-houses are built, under direction of the town, upon a competitive basis. Salaries fix themselves by economical law, or speaking essentially, market value. Fuel finds its unyielding price, and is limited by its limit of combustion; repairs are not often expensive, and can be kept within a narrow margin. A little patient examination will relieve the anxiety of those who are oppressed with the fear of waste on the part of the school committee. Nearly their whole fund is exhausted by two or three large items, and their whole account can ordinarily be read at a glance.

For the Committee.—WM. E. FARMETER.

WILMINGTON.

It will be seen by this Act that after the year 1869, we shall lose the benefit of the School Fund, unless we abolish the district system. This itself is a very strong reason why we should do away with that system.

There can be no question that our schools would be far more successful if the whole management of them put directly under the care of a superintending committee, while the town takes the sole charge of the several school-houses. The superintending committee have a partiality in the matter of teachers. Why should they not do all that is now done about teachers? They would not then, as now, often feel obliged to approve a teacher not competent, because it is too late to remove him, or because they desire to regard the feelings of this or that influential committee, or to save trouble in the district. How much simpler and business-like the whole thing would be for the superintending committee to search out the best teachers, hire them, approve them, supervise and report upon their work. If this committee are not faithful and every part of this whole duty, let the town remove them, just as they do in regard to their other officers. Again, how much more simple and business-like for the town to locate and build the school-houses, repair them as occasion requires, and all this by a direct responsibility and oversight, just as they do their other town business. It is much easier, and less complicated, and how much more likely that well-located school-houses will be built, furnished, repaired, &c., in this manner when all this is undertaken through the cumbersome and jealous sovereignties of half a dozen districts. It is a consideration of some importance that all the cities in the Commonwealth, and nearly all the towns, and not a few of the small ones, have abolished the district system, and in every case the substitution of the town system has given satisfaction. There is no desire to go back to the old way. We have no doubt that this would be our experience if we only have the will and courage to make the change.

Committee.—SAMUEL H. TOLMAN, SYLVESTER CARTER, Jr., WILLIAM H.

WINCHESTER.

Course of Study to be followed in the Primary Classes of the Winchester Schools.—*First Year.*—Learn the letters and their powers. Read Hillard's "First Primary Reader." Spell twenty-five pages in Webster's "Speller," both phonically and in the usual method. Learn the Greek and Roman numerals, and to add numbers, the sum of which does not exceed fifty.

Practice printing and drawing on the slate, and singing daily.

Second Year.—Continue spelling (in both ways) and printing through Hillard's "Second Primary Reader." Learn to add and well "in the head." Continue singing.

Third Year.—Learn to spell and analyze any words. Finish "Third Primary Reader." Become familiar with addition, subtraction, multiplication, division, and their tables. Write a plain "hand" slate. Begin geography. Continue singing.

There is less of monotony and mannerism, and a decided improvement in distinctness of articulation, which will increase more as the system of reading is better understood and taught in the Primary and Intermediate Schools. It should never be forgotten that the introductory exercises, which precede the ordinary lessons in our reading-books, are a very important part of the book, and deserve the careful study of the teacher and children. Persevering drill in these will work wonderfully in correcting defects, and even in removing impediments in speech. Pains should also be taken to form good habits of speech in reading, for here is one field for putting into practice what is taught in the reading lesson. There is an absurd paradox in requiring distinctness and correctness in the reading class, while we tolerate mumbling, gabbled, slurring speech in all the other classes. Of all accomplishments the most delightful is elegant, correct and easy speech; it is free and easy in the morning, and new every evening; good alike for the quiet home and the crowded drawing-room; welcome to the laborer as to the man of letters, and instruction in this accomplishment should be a part of every lesson.

The report of last year spoke in strong terms of the importance of the Primary Schools, and each succeeding term has made this truth plain to your committee; and they are anxious that it should be felt by the townsmen. It is no more important that the High School should be in good condition than that the Primary Schools should be. In the early years formed, the child's first impression of school life and study. The tone, of the first term here may characterize the whole of the future. Correct enunciation, promptness, quiet and cheerful manner, dexterity of hand, even the proper carriage of the person, must, in four cases out of four, be learned in the Primary, if in any school. The reader consider whether the best qualities of a teacher are not found in such schools, and whether such qualities do not deserve to be rewarded. Several years ago, the accomplished and able lady now at the head of the Boston Training School was induced to leave Oswego, and take a prominent place in a Boston Grammar School. After filling her new position while, very much to the satisfaction of her employers, she said to the superintendent, "Sir, I cannot stay in Boston, unless I am promoted." Not understanding whither she could expect to be promoted from

different schools of the same grade; shall see that the prescribed books are used, and studies pursued, and none others, and that the existing regulations and all orders of the board regarding the schools are carried into effect.

SECT. 3. He shall exert his personal influence to secure as general a regular attendance as possible, and equalize as far as may be possible the numbers in the different schools of the same grade. He shall have the direction and control of the transfer of scholars from one school to another of the same grade; and all certificates of transfer shall be signed by him. Upon every application for a transfer, he shall carefully investigate the reason therefor, and especially regard the number in the schools of the residence of the scholar. In doubtful or difficult cases, he shall consult the appropriate sub-committees. He shall take cognizance of all truancy or non-attendance upon school, which may come to his knowledge, and strive in every instance to reform the child. In case his efforts are unsuccessful, he shall report the child to one of the officers whose duty it is to make complaint in such cases.

SECT. 4. He shall devote himself to the study of our school system, and acquaint himself with the general progress of education. He shall attend all the meetings of the board, and shall, when called upon by the chairman, express his opinion on any topic under discussion, and communicate such information as he may have. He shall, when requested, attend the meetings of special committees, and render them such assistance as may be required. He shall keep a list of applicants for situations as teachers, and all such facts as may be known to him regarding the character, experience and qualifications of the applicants. He shall render to the sub-committees of schools all assistance in his power, and keep them advised with regard to matters pertaining to their several schools.

He shall prepare and present to the board, at some time during the month of March, a general report of his labors for the year, accompanied by such statistical tables, and such suggestions in regard to the improvement of their efficiency, as he may deem advisable.

SECT. 5. He shall receive and examine all bills of which this board takes cognizance. He shall pay particular attention to the school-grounds, appurtenances, and to the methods of heating and ventilating, so as to secure to teachers and pupils health and comfort, and at the same time economy to the town in the expenditure of money and to prevent waste and injury to property.

He shall open an account with each school, in a book to be provided for that purpose, which account shall state the actual expense incurred for what purpose the money is expended. He shall ascertain all the facts with respect to non-resident pupils and pupils of non-resident parents, and see that the information is laid before the board.

radicalism and conservatism, if not uncommon, are certainly unreasonable. There is a natural process by which the mental faculties may be developed, and it is a matter of vast importance whether the perceptive or the reasoning powers are unfolded first, for the one is a natural order of development, the other unnatural; the one is in accordance with the laws of the mind, the other in direct opposition to those laws. Shall the memory be kept constantly on the stretch and the judgment neglected, as is frequently the case, or shall they be exercised together? These questions, and such as these, must be answered before we can arrive at the proper methods of teaching. A careful observation of the methods pursued in our schools convinced me that in this respect there was much to be improved, and that the best interests of the schools demanded that this matter should have immediate attention.

The last defect to which I alluded, was a want of unity of action in the school system. Schools of the same grade should do the same work, and should be the same in quantity and in quality, and the methods should be the same. With such a system, a pupil may be transferred from one school to another without the loss of a single day. Such transfers are frequent, and must necessarily be, in consequence of change of residence, the necessity of relieving schools that are overcrowded, and for other reasons. The higher the grade, the greater is the need of such a system. Take, for instance, the Grammar Schools. These are recruited from all parts of the city, a year from the Intermediate, the next lower grade. The Central Grammar School receives pupils from at least eight different schools. Unless all the schools shall have done the same work, the attainments of the pupils at the end of the course differ. In the Grammar School they are to form one class, and it follows of necessity that there must be a loss of time somewhere. The most advanced must wait for the others to overtake them, and the others who are deficient must be pushed forward more rapidly than their progress will allow. The result is that many become discouraged and leave the school at the close of the first year. The same remarks apply with great force to the High School in its relations to the Grammar Schools.

In order to remedy the defects which I have pointed out, I first took the preparation of a programme of studies for each grade of the city. The result of my labors in this direction I now submit for your consideration. The work for each year is first stated in general terms, and the part to be done each term is given in detail.

PROGRAMME OF STUDIES.

PRIMARY SCHOOLS.—First Year.—Sheldon's Reading Charts; words on the same to be spelled by the sounds and the names of the letters. Hillard's Second Reader; the words in columns to be spelled by the sounds and the names of the letters.—Arithmetic, through the "First Step" in Sheldon's Manual.—Geography, through the "First

marked; the words to be written on the slate; difficult words spelled by the sounds and the names of the letters. Questions on the meaning of capitals. Conversations on the meaning of what is read.—Robinson's Intellectual Arithmetic. Exercises in Written Arithmetic on the slate and blackboard.—Colton and Fitch's Introductory Geography.—Dunton and Scribner's Writing Books.—Lessons on objects, fifteen at least each day.—Singing and physical exercises daily.

First Term.—Hillard's Third Reader, from the 106th to the 126th page.—Worcester's Comprehensive Speller, from the 46th to the 71st lesson.—Robinson's Intellectual Arithmetic, through Addition. Addition in Written Arithmetic on the slate and blackboard; no amount to exceed one million.—Colton and Fitch's Introductory Geography, from the 26th to the 28th page.

Second Term.—Hillard's Third Reader, completed. Worcester's Comprehensive Speller, from the 71st to the 105th lesson.—Robinson's Intellectual Arithmetic, through Subtraction. Subtraction in Written Arithmetic on the slate and blackboard; no minuend to exceed one million.—Colton and Fitch's Introductory Geography, from the 26th to the 28th page.

Third Term.—Hillard's Fourth Reader, from the 88d to the 89th page.—Worcester's Comprehensive Speller, from the 105th to the 139th lesson.—Robinson's Intellectual Arithmetic, through Multiplication. Multiplication in Written Arithmetic on the slate and blackboard; no multiplicand to exceed one billion.—Colton and Fitch's Introductory Geography, from the 28th to the 52d page.

Second Year.—The same general directions as in the first year.

First Term.—Hillard's Fourth Reader, from the 81st to the 127th page.—Worcester's Comprehensive Speller, from the 140th to the 168th lesson.—Robinson's Intellectual Arithmetic, through Division. Division in Written Arithmetic on the slate and blackboard; no dividend to exceed one billion.—Colton and Fitch's Introductory Geography, from the 52d to the 70th page.

Second Term.—Hillard's Fourth Reader, from the 127th to the 128th page.—Worcester's Comprehensive Speller, from the 168th to the 190th lesson.—Robinson's Intellectual Arithmetic, from the 57th to the 73d page. Fractions in Written Arithmetic; applying such principles only as have been developed in the Intellectual Arithmetic.—Colton and Fitch's Introductory Geography, from the 70th to the 80th page; also the 92d page.

Third Term.—Hillard's Fourth Reader, completed.—Worcester's Comprehensive Speller, from the 190th to the 210th lesson.—Robinson's Intellectual Arithmetic, from the 73d to the 80th page. Fractions in Written Arithmetic; applying such principles only as have been

uphy, from the 60th to the 70th page.—Syntax of nouns, adverbs and adverbs.

Third Term.—Hillard's Fifth Reader, from the 1st to the 22d page.—Worcester's Comprehensive Speller, from the 146th page to the 156th page.—Robinson's Intellectual Arithmetic, from the 129th to the 145th page.—Percentage in Robinson's Practical Arithmetic, from the 230th to the 252d page.—Colton's Quarto Geography, from the 70th to the 80th page.—Syntax of pronouns, prepositions, conjunctions and interjections.

Third Year.—The same general directions as in the first year.

First Term.—Hillard's Fifth Reader, from the 22d to the 39th page.—Robinson's Intellectual Arithmetic, from the 104th to the 113th page. Percentage in Robinson's Practical Arithmetic, from the 252d to the 269th page.—Colton's Quarto Geography, from the 80th to the 103d page.—Apply the principles of etymology and syntax to a portion of the reading lessons assigned each term; the selections not to exceed ten pages, and to be about equally divided between prose and poetry, with an abundance of original written exercises in illustration of each principle.

Second Term.—Hillard's Fifth Reader, from the 39th to the 54th page.—Robinson's Intellectual Arithmetic, from the 113th to the 118th page. Ratio, Proportion, and Variation in Robinson's Practical Arithmetic, from the 269th to the 332d page, and from the 332d to the 336th inclusive.—Colton's Quarto Geography; review the Western Hemisphere.—Grammar, as prescribed for the first term.

Third Term.—Hillard's Fifth Reader, from the 54th to the 74th page.—Robinson's Intellectual Arithmetic; reviewing the most important principles. Involution and Variation in Robinson's Practical Arithmetic, from the 336th to the 383d page.—Colton's Quarto Geography; review the entire book.—Grammar, as prescribed for the first term.

HIGH SCHOOL.—*First Year.*—Algebra, Latin, French, Natural History, English Language, Geography, Reading, Writing.

Second Year.—Rhetoric, Latin, French, Chemistry, Geometry, English Language, Geography, Reading, Writing.

Third Year.—History, Latin, French, Geology, Natural History, Arithmetic, English Language, Geography, Reading, Writing.

Fourth Year.—History, Latin, French, Astronomy, Botany, Chronology of the United States, English Language, Arithmetic, Geography, Reading, Writing.

Declamations and Compositions through the course. Classes in Book-keeping and Surveying whenever a sufficient number of pupils may desire it.

in the Grammar Schools from four to three years, as all Scholars graduate from these schools at thirteen or fourteen. This reduction of time in the Intermediate and Grammar Schools enables a pupil to pass through the full course of four years in the Intermediate and graduate at seventeen or eighteen years of age, or the full course of three years and graduate at sixteen or seventeen years of age. I am confident that this plan, if properly carried out, will meet the approval of the people, and I submit it with the hope that it may receive the approval of the Board.

I now invite your attention to some of the changes that have been made in the methods of teaching. I begin with the Primary Schools. Reading and spelling occupy much of the time in this grade. Indeed, it is their chief work. It is very necessary that this work be well done. The best methods should be discovered, and made imperative. For instance, there are two methods of teaching the alphabet: one, by teaching the names of the letters, and the other, by teaching their sounds. At the time of my first visit to the Primary Schools in September, both methods were in use. A majority were using the former. If we are to judge of a method by its results, the question which of these is to be preferred. Accordingly, I have been in bringing the matter to your notice, and in accordance with the recommendations of the Board, have obtained Sheldon's Phonic Reading Charts for use in the Primary Schools, and the corresponding class in the Intermediate. These charts are eighteen in number, and contain sufficient material to occupy the greater part of the first year. The pupil passes on to Hillard's Second Reader. This change, I believe, receives the approval of the teachers. Changes have also been made in the methods of teaching arithmetic and geography. The instruction in these branches is oral, and is based upon the principle that the pupil is to be taught to think; that ideas, not words, are the legitimate objects of instruction. As a guide in the teaching of these branches, I have recommended the use of the teachers, Sheldon's Manual of Elementary Arithmetic, believing it to be well adapted to this purpose.

The use of the slate in the Primary Schools has been encouraged. In the second and third classes have been taught to print small letters and capitals. The first class has been taught to write. The interest in these exercises is truly encouraging, and the progress, in my judgment, is remarkable. Little boys and girls who three months ago could write a single letter of the alphabet, can now write the small and capital letters, and some of them even their names legibly and in good order. The pupil is thus furnished with useful employment, and the good order of the school is thereby promoted. These slate exercises, in my judgment, are invaluable. Such are the most important

- which a change of method is needed. I have asked you these in particular, to enable you to judge of the general scope and labors in this direction.

Superintendent of Schools.—THOMAS EMERSON.

Rules and Regulations.—1. The teachers will be at their schools fifteen minutes, and in stormy or cold weather twenty minutes before school time.

2. They will see that their rooms, grounds and all the premises of the school-house, are kept neat and in good order during term time.

3. They are not to dismiss their schools or change the time of school except by permission of the committee, nor must any teacher be absent more than fifteen minutes.

4. No contributions for any purpose are to be taken up, nor any money not pertaining to the direct work of the school, and no agent is to display their books or wares in the schools.

5. Scholars who do not reach the school-house before the time of school or who have been absent from school, must have a written permission from their parents or guardians, before they can be admitted. This rule applies to all but Primary Schools.

6. Any damage done to the school-house, grounds or premises, shall be paid for by the parent or guardian of the child or children of the school. "General Statutes of Massachusetts" enact, that all such wrong-doers shall be punished "by a fine not exceeding five dollars, or by imprisonment in the jail not exceeding one year."

7. No deviation must be made from the course of study prescribed by the committee, nor any scholar either degraded or promoted without their assent.

WORCESTER COUNTY.

ATHOL.

The town, the past two years, has by abolishing the old schools and redistricting the town, made a strong move in the right direction, and we believe the discontent thus produced has very generally subsided, and all are ready to admit that these changes were necessary and desirable. The size of our schools is now such that with the same outlay of money our children would receive the same privileges than formerly; very few would prefer the old system.

exampled liberality, the town voted at the last March meeting to appropriate \$3,600 for District Schools, thus doubling our appropriation for the year, and \$700 with the income of the school fund for the High School, with the understanding that all the schools should be kept thirty weeks in a year, and the High School forty weeks. Under the support of each school, you will notice that all the scholars have the privilege of thirty-two weeks' schooling with but three or four weeks' vacation when from accidental causes they had but thirty weeks.

We believe the town never made an appropriation of money which has given general satisfaction to all our people—never made an appropriation which promises such a return in the present and future, of real, substantial good; and we are happy to here record the fact that at the annual meeting this year, the town by providing for thirty weeks of school for the ensuing year, has substantially maintained its advanced position, and we have no doubt but that it will continue this policy.

The action of the town, in voting not to divide the school money among the districts, as recommended in our last report, has worked well, and is more equal than the old practice, which would give one school twenty-five and another twenty-five weeks. Now all the schools are on the same number of weeks alike, and equal school privileges are everywhere more nearly secured.

Committee.—JAMES P. LYND, GEO. L. HUNT.

AUBURN.

The increased appropriation of the town the past year is an important step towards a higher grade of schools. It enables the prudential committee to secure the services of teachers of ability and experience, at a higher salary than they have been able to pay before, without making the term of service so long as to meet the requirements of the statute.

Teachers cannot exercise too much care in their choice of teachers. The committee should be sufficiently interested in the welfare of the schools to inquire for themselves as to what is wanted of a teacher; and to allow no one to be employed except suitable qualifications, to govern them in making their choice, so that those may be secured who not only may succeed, but from their own ability to perform what is required will be something more than likely to do well. The idea that any one will do for a summer term school, is erroneous.

When a person wishes to construct any difficult or complicated piece of machinery, he would consider it a waste of time and money to employ a person not thoroughly acquainted with the business. The education of

the young is a work that demands all the skill and energy it is capable of engage in it.

School Committee—S. A. NEWTON, Jr., D WHITNEY.

BARRE.

Spelling.—More than usual attention has been given to spelling during the winter, and some new methods of recitation were introduced which have awakened an interest in this so much neglected yet important branch of study, that was very encouraging.

There has been a growing dislike of this study in our schools during the last few years, and the larger classes have considered this recitation peculiarly to the primer classes, and beneath the notice of the higher and first classes. A few words were spelled from the reading books daily, and in many schools this was all the attention given to this important study by scholars above the age of ten years. Our board has averred that it was impossible to get a good recitation in this study from older scholars, and at the teachers' meetings the question was discussed as to what can be done to make this study inviting to the scholars, so that they would give their spelling lessons enough study to acquire a respectable proficiency therein. Town spelling schools were proposed and accepted to overcome the difficulty; and accordingly spelling schools were held in the school hall on Saturday afternoons in which nearly all the districts were represented. A lesson of some ten pages, from the spelling book, was given out weekly. A commendable rivalry soon existed among the pupils to be victorious in the "spelling down" exercise, in which the scholar making it to his seat. The people of the various districts began also to take an interest in the matter and to encourage their scholars not only to win the victory for themselves but for their districts. So great has this interest been excited that many of the venerable and prominent citizens have proposed a spelling school in which not only the scholars of all districts but all others in town may compete; and to add zest to the idea it was proposed that the committee, teachers and scholars should be invited to those not intimately connected with the schools. Whatever was adopted this year, the success of the past winter, the snow notwithstanding, has been such as to warrant a continuance of the schools either weekly or bi-weekly, the details of the meetings to be determined by consultation with the teachers and others interested.

School Committee.—N. E. HOLLAND, A. G. WHELOCK, CHARLES G. A.

BERLIN.

Each district agent ordinarily has applications sufficient to fill the schools in town. But the school committee have hitherto met only

empathizes with him in not liking the teacher, and that for no in reason under the sun.

Few teachers have every aptness. It is so in all callings. But is not a tangible defect, and commits no positive offence, how utterative of the first objects of a school is parental leniency to a more special attachment to a teacher.

Again, we could read you chapters of careless and ill-willed behaviour in good schools, which parents of such disturbers never dreamed of being a nuisance. But how many parents are there who will have a child's faults which affect the whole district, fairly stated to them real?

Scholars have rights. An abusive teacher ought to be discharged. Scholars be heard. Decide the question on its true merits. But no human nature in the teacher as well as in the child. A child is made to see the difference between being wronged and not being wronged, and no child not wronged should be countenanced in school complicity. The reason he is not so pleased as to like his teacher. We are not advocates for teachers who abuse their calling; nor for such as make themselves into it unfitted by nature for so great a work. Such, in respect, we have known. But it is not these especially who encounter the obstacles referred to. Many a school has failed in this town, for want of parental co-operation through the pupils. Parents must surround the school. We do not ask that you rally to the support of a teacher who has not just claims to her position. But if she is impeached by open and fair statement of charges, you must not be moved by mere dislikes. It is easy to say that a teacher must gain the love of the pupils. But if a teacher fails of this, yet does not wrong a pupil, and is competent as a teacher, it is abusive, out of measure, to oppose her or neglect her orders. Abusive to her, and abusive to the school.

We see plainly the want of more superintendence of the school. Your committee are likely to be always men of many other cares. The matter of compensation, by law and by usage, does but little in the service. But every school really needs two or three entire days every week from the same person. He needs to see the whole routine of the school and to know the standing of every class. Then he can intelligently judge of teacher and pupils. The service would in itself be a pleasure to a worthy school committee. But in this selfish and business-driven age, the principle of pure benevolence is waiting for its day. The substitute for such visitations as suggested is the frequent calls of the board. Were the proper interest shown in this respect, there would be no school term without some visitation. It would have a most beneficial effect on teacher and pupils.

School Committee.—W. A. HOUGHTON, WM. BASSETT, E. HARTSHORN.

BLACKSTONE.

Improvements have been made in the Common School system in the last half century. It would be interesting and profitable to compare the school-houses, the text-books, the reading books and the methods of teaching fifty years ago with those of the present day. But we should be more profitable to examine and see if there are not things in our Common School system which will not bear criticism. For improvement, we are sometimes liable to improve.

Sometimes a reputed improvement turns out to be a mere change for the worse.

In a few years past great stress has been placed on thoroughness.

We believe it has been introduced and made popular by the Normal Schools, and there is no better quality in our schools than thoroughness when under the guidance of good common sense. Thoroughness without some measure of progress has no merit. The lessons in our schools are made up of scholars of very different capacities. Some will learn a lesson in thirty minutes, which cannot be learned by others in two hours. And to make the matter still more tedious, recitations are almost wholly dispensed with in many schools. The scholar in the class must be waited for by all the rest, till he can recite the whole lesson from beginning to end without omitting or misstating a single fact or idea. By the use in recitations of properly selected questions, the class would be able to get longer lessons and fix more valuable facts in the mind. In the manufacturing villages, a large part of the children leave the school at the age of fourteen or fifteen. While such children do attend school, it is highly important that their time be spent in learning those things which will be most useful to them in after-life. In reading, we think there has been great improvement in the last twenty-five or thirty years. In most of our schools we have a much larger proportion of good readers than formerly. The schools in the villages have contributed much to this improvement. In the lower grades, reading and spelling occupy almost the whole of the school. In the ungraded schools, the time of the teacher is spent almost all the Common School branches, and necessarily but a small portion of time is given to reading and spelling. In proficiency in reading there is a great diversity in our schools. In some the spelling is satisfactory and deserves much praise; in others it has evidently been much neglected. We can hardly acquire too much knowledge of the English language, which is the medium of all our communications with the world, and the vehicle of almost all improvement and progress.

The constitution of Massachusetts confines the right of suffrage to those able to read and write the English language. But we ought not

be satisfied to allow any child to take leave of the schools without being able to speak and write the language with some degree of grammatical correctness. We find few good grammarians in our schools. Grammar is not studied so much, or it is not studied so successfully, as formerly. Fifty years ago, when scholars generally attended school six months in a year, and studied Murray's Grammar and Exercises, our schools exhibited as much proficiency in the grammatical use of the English language as they do to-day.

Those text-books which teach the correct grammatical use of the language in the shortest and most direct manner, are the best adapted to the limited time which a large class of children are permitted to devote to grammar in Common Schools. As a general rule it should be the object of the teacher to direct the studies of the pupil in such a manner as to give him the greatest amount of useful knowledge in the briefest time.

After he has acquired a thorough knowledge of grammar, and the agreement and government of words in sentences, and the application of the rules of syntax so as to be able to parse correctly, and most difficult authors, analysis may be introduced as an interesting exercise. As an introduction to rhetoric, perhaps it may be studied with some profit.

School Committee.—M. D. SOUTHWICK, J. E. EDWARDS, E. W. PORTER.

BOLTON.

We have no faith in the stand-still policy. We believe in progress. We believe we are, on the whole, advancing. "New times demand new measures and new men." Progression is written on the face of the world. And because a certain style of school-house, a particular method of study, or certain noted teachers were good and performed all that was required of them in their day and generation, it does not follow that they would be considered good now. Still there are those who do not believe in this progress; particularly when applied to schools. They think, (or at least talk as if they thought,) schools in former days were better than now. It is only necessary that these would-be savants enumerate the subjects about which a scholar was expected to be informed in former days, and make a comparison with the studies of the present day.

How many and how various are the applications of steam, electricity, light and heat. These subjects then were comparatively in the infancy, and but little understood, and a school-boy knew little or nothing of them. How a child of fifteen, educated in one of our District Schools, would know something about any one of them. No one then had ever thought of physical geography as a separate study for our schools; and in political geography, what a trifle was it to learn about fifteen or twenty States.

ntly, at other times by hasty steps amidst the cares and perplexities of a difficult and often irksome calling, but seldom grave enough to justify rebuke; should such arise there are proper ways to meet them, and no remedies to be applied. That our Public School system is vitally connected with the purity and permanence of our republican government, and the extent and importance of this relation are continually increasing. Its effects too potent to require proof. But the question is, How can our system be made most effectually to foster a wholesome respect for law? In so far as content that the school fails to secure this end, it fails in one of its most important functions.

"Order is Heaven's first law," and should be the requisite of every school. In schools of from forty to fifty scholars, a morbid reliance is placed for subordination on the power of persuasion alone. Those who are governed nowhere else, and nowhere else persuaded, are expected to be ruled under a salutary restraint by the gentle sway of inviting appeals. We urge nothing against the power of persuasion within its proper limits, and we could wish that these limits were much wider than they are now. As they doubtless would be with improved domestic education. A steady respect to authority at home prepares the way for easy government in school, and whilst it is a perpetual blessing to the child, it is a source of comfort to the parent and a service done to the public. Not till the child has learned that authority creates the power of persuasion at home can it expect to triumph abroad. Law—not a name, but a power—must have a real existence, and if this knowledge cannot be communicated by its own force, it should be acquired by a sense of its wholesome penalties. While we concede that corporal punishment in school is seldom necessary or wise, we would not have it interdicted, unless it can be shown that it is intrinsically wrong. It is often denounced on the ground that it blunts the moral sensibilities of the scholar. What sensibilities? It appeals directly to the physical sensibilities, and in the few cases that really demand punishment, these are the only sensibilities that can be reached by any other approach. No, but it is the moral sensibilities that are blunted, not the physical, that in the supposed cases, these have already been so blunted and benumbed, that they are not affected by the higher motives. It is once brought within the sphere of proper authority, and an opportunity is gained to make the voices of the angels of their better nature heard. An opportunity which every true teacher is ever anxiously waiting for. Again, it is objected that corporal punishment destroys the self-respect of the scholar. What is the province of self-respect? What has it to do with the time that the scholar has been trampling upon well-known principles, and continued indifferent to motives that appeal decisively to self-respect? Self-respect must exist before it can be destroyed. A noble quality when it is genuine, and should be cultivated with

ice, that they hold an important trust. Vexatious and trying as the office generally is, he should consider himself for the time being as the servant of the district and as an agent of the town. The school buildings are in his care, to be protected in vacation and kept in repair during the term of school. This does not require any previous order of the district directing him to put the house in proper order. If a window is broken, if a door needs a latch or lock, if the plastering has fallen, if the walls, or the room needs whitewashing, or the seats need to be made comfortable, or if the windows have neither blinds nor shades,—in all these and similar cases, it is the duty of the prudent committee to repair the injury or supply the defect; so in regard to desks, files, brooms, dippers or tumblers. For the above mentioned purposes the prudential committee has the whole credit of the district at his disposal. He must or can make these provisions, and the district must pay for them. No majority can prohibit him by any vote. He derives his power from the people, and a district cannot repeal a statute of the Commonwealth. For the accomplishment of one of the above named purposes can the prudential committee expend any part of the money raised by the town for the support of schools? No. It is a charge which belongs to the district, and the district must provide the money to defray them.

It has been the practice, we fear it is now to some extent, for prudential committees to abstract some portion of the school money in order to defray some of these expenses, but such a course is without warrant and is illegal. In addition to duties of prudential committees, and in addition to the most important of all, is the selection of teachers. Too great vigilance cannot be used by them in the discharge of this duty. Without bringing real interest and integrity to their work, the schools are liable to failure; if otherwise, they are liable to prove a failure. Understanding and good feeling should at all times exist between the school committee and prudential committees. Let no jealousy of rights infringed or undue importance attach itself to the holding of either office. In case of a difference of opinion as to the fitness of any teacher who is presented for examination, and which might result in an expulsion of a teacher from a school after a fair trial, throw a whole district, parents and children, into a controversy which may take years to obliterate.

School Committee.—A. H. MOULTON, D. S. Fiske, Geo. W. JOHNSON.

DUDLEY.

How different, in many cases, would our schools appear if visited more by the parents! Children love to be noticed, and when others are interested in them, and this knowledge incites them to be more studious and more obedient. If parents would become

nd presence. This quality is not necessarily allied with those that literary culture and fine scholarship possible, and its combination with them is, in fact, somewhat rare. When, however, united, their power may become, if he desires it, a most useful and distinguished instrument, and failure, if he honestly devotes himself to his task, is impossible. He will be successful, and what is more, he will be successful from the start.

It is precisely because these men are rare, that in the trial of teachers so many failures are experienced, and it is for the same reason that when found, it is so difficult to keep them, unless inducements can be offered them, in some degree commensurate with their value. Highly remunerative situations will always be open to them.

They cannot be expected they will be contented to fill inferior ones. Where it has generally happened in the efforts to fill the vacancies in higher schools, that while no difficulty was experienced in finding men of sufficient scholarship, it has been a task of formidable difficulty to find one who was not only an accomplished scholar, but whom experience had proved capable of properly governing his school. Failing to obtain one, the only alternative was to make the experiment with those promising of those who offered themselves, and if the requisite capacity and discipline was not wanting, a successful school followed almost as a matter of course; for the possession of scholarly gifts and training can be, in many cases, satisfactorily proved before the choice is made. If the power of government was lacking, nothing remained but to try the experiment anew.

School Committee.—ALFRED MILLER, C. H. B. SNOW, GEO. D. COLONY, H. J. OWEN, GEO. A. TERRY, THOS. S. BLOOD.

GRAFTON.

Another way of promoting the real efficiency of our schools, is giving to the Primary departments their true place in our educational system.

Do we attach sufficient importance to them? Is care enough taken in the selection of their teachers? They need the very best. In no part of life does the child need more skilful training than during the period spent in the Primary Schools. If he is under the right influence, it will be comparatively easy to instruct and govern him when older, when once broken by a master of the business, may be made by a less skilful hand afterwards. But we are not in favor of burdening the traces little children of five, six and seven years old, with a course of hard and severe study. It is absurd to suppose that they are interested or benefited mainly by books. What they need most of anything else, is oral instruction. To confine them to books wears out and disgusts them, and prejudices them against the school. We must

at good teachers without paying them well. A young lady who will take a dollar a day in a shop, will not teach school for three or four weeks. No more laborious or pains-taking class of persons can be had as faithful teachers, and "the laborer is worthy of his hire." Her things, so here, the best is the cheapest.

Would it not add to the usefulness of our schools if more attention could be given in them to the cultivation of polite and correct manners?

This is not one of the main subjects to be looked after, but it is of sufficient importance to demand more attention than it now receives. A kind and winning manner on the part of a teacher is a powerful influence in a school. Let, then, the teacher cultivate this spirit in all her intercourse with her pupils; and let her precept and example, teach the scholars to be respectful, courteous, obliging, to cultivate a nice sense of propriety, and a true respect for the teacher. All this will gain them friends, and enable them to be more successful in life than will a rude, coarse, disrespectful deportment, a want of respect for the teacher, a want of propriety, and a disposition to please or oblige only when it suits them, and greatly to soften the asperities of daily life, and prove a lubricating oil to make the complicated machinery of the school work smoothly and effectively. Let then the children be taught at school as well as the home, to be gentle in their deportment, quiet in their movements, pure in their language, kind and affectionate in all their intercourse with each other, their teacher, their parents, and all others.

School Committee.—THOMAS C. BISCOE, GILBERT ROBBINS, JOHN W. BROWN.

HARDWICK.

The school committee would kindly and constantly urge upon the parents the necessity of their cordial sympathy and co-operation with the school, in order to secure the highest prosperity of our Common Schools. If the influence of teachers is thus sustained by them, they cannot but be successful in the instruction and discipline of their children. If it could be in other circumstances. Children place great confidence in the judgment and opinions of their parents, and readily imbibe their feelings, look to them as their superiors, and if through their influence derive a disrespect for their teachers, their influence over them is entirely lost. Let the demerits of the teacher be freely discussed by parents in the presence of their children, and this sentiment will be diffused through the whole school, through the sympathy existing between the scholars, and surely work its ruin. Parents cannot more easily impair the influence of a school, prevent its success, than by displaying in the presence of its pupils the faults of the teacher, and attempting

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ely directing their reading, and by aiding them in forming
to reading as to obtain the full possession of the treasures
tains.

Our committee, in closing their report, would offer a few thoughts
important subject of school discipline. It is a subject which
teachers and parents should fully understand. It is most intimately
connected with the success of our schools. A prosperous school cannot
be maintained without judicious discipline than the health and vigor of
the human body can be secured without the free circulation of the blood.
The school must respect and yield to the authority of the teacher or fail.
There is no other alternative. How can successful instruction be
secured in our schools without quiet and stillness in the school-room,
and the close attention of scholars to their studies? The power that
can secure this lies at the foundation of all discipline. In some
Public Schools this cannot be secured without a resort to coercive
measures. Just punishment becomes necessary to the prosperity and
even existence of the school. While the rod slumbers in the closet,
disorder disturbs the school, preventing success. The wayward scholar
cannot be controlled by moral suasion. They are lost to its power.
The passions are too strong to be bowed by its influence. There can be no
steady progress in the school-room until order and quiet are restored.
What shall be done? Shall we sacrifice the school, the money and
support, the property connected with its maintenance and its
reputation? or shall those be made to submit who will not conform
without an experience of the penalties of their violation? These
things are in some schools. Shall the balance turn in favor of the
wild spirits who are beyond the reach of moral suasion, or in favor of
the benefits to the community of a successful school? It is indisputable
in the interests of the school and the public good that these scholars
must see and feel the right of coercive measures. This must be accomplished
if the school is ruined. There is no other possible way. They must
either be expelled or subdued by corporal punishment. To expel the scholar
and deprive him of all the beneficial influences of the school-room,
the means of mental and moral instruction, turn him over to the
grace to the society of evil companions, to be led by their passions,
unless he is beyond the age that legally entitles him to a place in
Common Schools? It may be he is under no restraint at home,
the salutary influence exerted upon him comes from the school.
Expulsion may do him a great evil, and corporal punishment may
keep him under the beneficial, the elevating influences of the school.
Disorderly, undisciplined youth have been reformed, made quiet and
obedient scholars by coercive measures. The prosperity and success of our
schools imperatively demand that the reins of authority be placed in the

What poetry shall I read you?" "Gray, Gray!" "Do you would read you Gray's Elegy?" "Yes, yes," was the answer; and that great spirit that was passing found its last hours consoled by listening words that, it is to be feared, fall utterly unheeded on the ears of our Harvard scholars.

Now, if James Wolfe and Daniel Webster had such a value for poetry, and derived such deep enjoyment from the poem named, it is certainly not an idle inquiry whether these able men judged wisely herein, and whether they, in this matter, got a good out of life that we are foolishly denying. We can understand their appreciation of poetry somewhat by a comparison of the value of the kindred art of music. Music gives business value to a few music teachers or professional artists. Scarcely any one else is able to get money by learning to sing or play. Yet even the poorest of our people wishes his children to gain as much of these accomplishments as possible, because, if they do not give business or bring in money, they certainly enrich and sweeten human life; they add greatly to their possessor's comfort and happiness—and, of course, happiness all are seeking; and music, as one of this great thing, our people judge well in cultivating as they can. But not all men competent to decide on their comparative merits, know what music has, for giving happiness, a power that fades into insignificance when contrasted with the power of literature in the same direction. The range of music is but limited, and its variety meagrely poor, compared with the limitless range and innumerable variety of letters. A very great man, lately dead, speaking of the literature of Athens, expresses its value: "But who shall estimate her [Athens'] influence on private happiness? Who shall say how many thousands have been made wiser, happier and better by those pursuits in which she has taught them to engage; to how many the studies which took their rise from her have been wealth in poverty, liberty in bondage, health in sickness, and peace of mind in solicitude! Her power is indeed manifested at the bar; in the senate; in the field of battle; in the schools of philosophy. But these are not her highest glory. Wherever literature consoles sorrow or assuages pain, wherever it brings gladness to eyes which fail with wakefulness and where the heart aches for the dark house and the long sleep,—there is exhibited in its noblest form the immortal influence of Athens."

The means for realizing the above suggestions are to be considered in our highest reading-books,—in the midst, it must be acknowledged, of much trash,—contain some of the finest poetry, eloquence and philosophy of the world; enough for the suggested purpose. A small and simple book on rhetoric is all the other work needed. Time enough is available; and this time could be had in great abundance—saved from the absurd over-study of mathematics. For mathematics, beyond a limited amount, are rarely used by our people in life, and are commonly for

few years; while literary knowledge is in demand almost everywhere at all times. A lawyer will bring it up amid the dryest details of business, and a cultivated merchant alludes to it often in hours of trade.

School Committee.—JOHN B. WILLARD, AUG. J. SAWYER, S. G. CLARK.

HOLDEN.

Employment of Teachers.—As schools are now conducted in this place, success depends vastly more on the fidelity and wisdom of the prudential committee than on any, if not every, other agency. The agent who procures goods in the market, or contracts for labor, is, by common consent, regarded a chief man in the enterprise,—on whom its success depends. The prosperity of a school rests almost entirely on the competency and fidelity of its teacher, the procuring of whom is made the official duty of the prudential committee. Though teachers are examined by the general committee, and it is also their right and duty to summarily close schools which are not successfully taught, yet much the most important agent in procuring instructors of skill and worth is he by whom they are employed. It often occurs that the committee feel constrained to give a certificate of approbation at an examination, when they would by no means have consented with the individual to teach a school. There is evidently too little care exercised by some prudential committee men in searching for teachers of suitable qualifications. It is due to the schools that great conscientiousness and diligence be practised in providing instruction for a district which is placed on an individual such a serious responsibility. It should not be thought by the prudential committee that the general committee will supply their lack of either service or wisdom. They cannot generally do so to any very effective extent. The prosperity of schools depends in a great degree on the teachers which they provide. If they are of a suitable intellectual, moral and social type, there will rarely be a failure of success. If any of these qualities are lacking, it will be difficult for all other agencies combined to secure a good result. Your committee would therefore renewedly, and with great earnestness, urge upon the consideration of the prudential committee the great importance of the duties with which they are intrusted. Let them fully understand that the prosperity of the schools in the districts in which they severally serve will very largely depend on the qualifications of the teachers whom they procure.

Course of Study and Instruction.—An education should "begin at the beginning," and the successive steps should be taken only as scholars are able to advance. The course of studies to be in all cases pursued in Common Schools, is pretty well defined and understood, viz.: reading and writing, arithmetic, geography, writing and grammar. In many schools, history, philosophy, and algebra may be profitably introduced. Without

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ering with success in these fundamental branches of education may often be wisely added. All of the education and preparation for the service of life, which most of our scholars receive under the present system, is obtained in our Common Schools. Nothing, therefore, is neglected in this course of instruction which tends to fit them for the duties and privileges of citizenship. Education is provided at public expense, and scholars who are taught may be better prepared for the duties and responsibilities of citizenship. Whatever most effectually accomplishes this design is the object of our attention in our Public Schools. The studies usually taught are of a more or less elementary kind, and hence should never be neglected. In many cases, essential aid may be afforded in composition, in oratory, and declamation: If there were high schools which scholars could attend after leaving the Common Schools, instruction in the more advanced branches of education might be wisely reserved for them. But as it now is, it seems desirable that the older scholars should be encouraged and taught to express their thoughts on paper, and to hear and declaim the expressions of others. It is a useful exercise, and such exercises need not do the least damage to the more elementary branches of education.

Simple and effective instruction should be given in regard to the rights and duties of citizenship. It is only by an intelligent understanding and faithful performance of these responsibilities, that one can be a good and safe citizen in a republican government. The child should be taught the nature and corresponding duties of all the relations he sustains; and not a few children are almost entirely dependent on Public Schools for right instruction and moulding of their relations of life. The school for which the public is responsible to the public to do all that is possible to prepare the youth for the best public service.

School Committee.—WM. PAINE, WM. C. METCALF, J. M. BALL.

LEICESTER.

The wages of our teachers ought to be increased in a ratio adequate to the increased expense of living. We cannot sympathize with a spirit that would pay teachers less than they fairly earn, but we should not crowd them into the necessity of taking what they can get. If we may be the mercantile maxim, we feel that by adopting such a policy we should be false to the first principle of the noble work which we are called on to supervise, the education of human minds. We have never had the opportunity to learn that the cheapest schools are of course the best. Nor do we regard that district necessarily the best, which can secure its teachers at the lowest price. For

reasons,—justice to the teachers, and justice to the schools,—our teachers ought to receive a fair remuneration for their time and the work they do, and great care ought to be taken to secure teachers who will really do that work well, and thus fairly earn what they receive. It is an invaluable work, and it should be done well, and should be well paid. And one way to have it done well is to pay well. Let teachers be well paid, and let them understand that their work must be well done. They must be competent and faithful. This is one reason why our school appropriations should be ample.

But there is one way in which our school money can be economized; and this would be equivalent to some increase in the amount appropriated. There are some citizens opposed to an increase of the appropriation, and yet strenuous that those districts which send very few children to school should have an equal share of the money with districts sending three or four times as many. Now there are contiguous districts which could unite in supporting one school without serious inconvenience. It is true a few, but very few, would be at greater distance from the school-house. Yet they would be at no greater distance than some already are, in their own districts; while, by uniting in the support of one school, that school could be made better and could be continued longer than can either school when separate. It is impossible but that some must travel farther than others in reaching the school-house. And is it reasonable that in order to save two, four or six children the trouble of travelling a distance which is no greater than many others are obliged to travel, two districts should have each a short and perhaps an inferior school, when, by uniting, both can have a long and a good one? For, two districts being united into one, there would be one district less to be provided for, and therefore each district would receive a larger portion of school money. Therefore this union district itself would be better provided for than before, while the expense of building, repairing, &c., would be diminished one-half, with a greater number to share it; and at the same time all the other districts would have their funds increased, and the town's appropriations would accomplish larger results for the public good.

School Committee.—J. N. MURDOCK, N. B. COOKE, GEO. O. WARNER.

LUNENBURG.

The school committee will hold afternoon sessions at the school-room in District No. 1, for the examination of teachers, commencing at one o'clock precisely, on the second Saturday of April, August, and November.

Prudential committees wishing their applicants to obtain certificates, must present them at some of the above-named times. Teachers and prudential committees often consult their own convenience in this matter,

to the great injury of the schools. It is not a sufficient reason for complying with these requisitions, that the candidate resides or for if rejected the prudential committee should have time and opportunity to obtain another. Copies of this report will be furnished to the prudential committees for the use of their candidates.

School Examinations versus Exhibitions.—Any one thoroughly conversant with our schools, cannot fail to observe that the tendency of the present method of instruction, in many of them, is rather to prepare for a grand show at the close of a single term, than to fit the pupils for the duties of after-life.

Scholars are often required to learn just what will be seen at these exhibitions, without reaching out above and beyond the limits of the subjects that they may thoroughly investigate the subjects on which they are asked. Such are unwilling to think. They wish, like some politicians, to follow a leader, and then imitate. They learn the rule and rest satisfied. They are ready at the so-called examinations to answer the questions asked by their teachers, often without missing at all; the school is successful, meanwhile, being silenced by their monopoly of the time, or by being dismissed, and another called; thus parents are flattered and deceived, and the committee are expected to pronounce the school a splendid success, while they have to rely on their previous visual knowledge of the real progress of the school.

If a school, the best possible, is properly examined by a committee, the pupils will always fail to give correct answers to some of the interrogatories. This is unavoidable, for if we would find out what a scholar knows, we must ascertain what he does not know.

We would humbly suggest that, when a school is offered for examination, and a school committee is employed especially for that purpose, it becomes their business, and not that of the teacher. This is a privilege and duty, and, in order that we may give credit where it is due, and reward the deserving, we shall hereafter adopt this mode of examination in all the schools under our care. Teachers will govern themselves accordingly.

School Committee.—EPH'M GRAHAM, C. A. GOODRICH, JAS. HILDRETH, &c.

MENDON.

The culture and refinement which distinguishes the educated man, that which really gives him influence and sources of enjoyment to his mind, is attained much more speedily by the study of other subjects than mathematics. The mathematician is among us unknown and unnoticed; but there is one educated in general literature undistinguished in society.

to read and recite poetry well will alone render you attractive, while, if you can speak or write easily and intelligibly for the public, your promotion is assured.

Let every friend of education strive to lead our scholars to acquire an accurate knowledge of language and the power of discriminating between sound and sense in writing and oratory. In no other direction will his labors be so abundantly rewarded, whether the happiness or usefulness of the young is sought. These remarks are made with no design to depreciate the importance of arithmetical knowledge; that is self-evident, and argument for or against it is as much out of place as it would be in an attempted support or refutation of a mathematical axiom. We do believe, however, that grammatical studies should receive more attention. We recommend recitations of selections from the best authors, and constant, intelligent practice in writing and composing. We believe parsing cannot be dispensed with, and that it should commence with the first lessons in grammar, and be one of the daily and leading exercises of the school. A teacher who is in earnest, with only average scholars will find her labors richly rewarded in the enthusiasm this study will surely arouse as the mind of the pupil perceives its constantly increasing attractions.

School Committee.—GUSTAVUS B. WILLIAMS, JOHN G. METCALF, M. C. GASKILL.

MILFORD.

Rules and Regulations.—The rules and regulations for the schools have been revised and reprinted the past year, and it is to be hoped that all teachers will make themselves fully acquainted with them, and avoid some errors that have occasionally happened in the management of the schools.

Some of the provisions of these rules and regulations are as follows:

“Teachers are required to be in their school-rooms fifteen minutes before the time for opening school; and pupils are to be then admitted.

“Teachers must keep a record of all cases of corporal punishment, with name of pupil, giving the cause, manner and extent of punishment.

“Pupils are not to be dismissed without a written request from, or personal application of parent or guardian, and not then unless the teacher sees fit to excuse the pupil from recitations not then rendered.

“It is required that in all schools some kind of physical or gymnastic exercise shall be introduced daily.

“Teachers may, for certain reasons, suspend a pupil temporarily, and must forthwith inform the parent and the sub-committee of the school.

“Every pupil must be vaccinated before admission to school.

“No prizes or medals are to be offered or awarded.

“No subscriptions or contributions are to be introduced into any school.

"If children are not furnished with books, it is the duty of the report to the proper sub-committee the name of the child needing, giving titles of books, with name of parent, master or guardian.

"No principal teacher shall receive pay till records of the school are fully made as required."

Corporal Punishment.—There is no one subject perhaps, at the present time, which so engages the attention of good educators and of true statesmen, as that of "Human Rights." Nor is there one which has so wide a range in its application. It enters largely into all social and political questions, it is active in practical Christianity and the key-note in social science. In short, its magnitude is only equalled by the difficulty of its comprehension.

In endeavoring to adjust this matter, rulers, legislators and educators have undoubtedly, and mainly unintentionally, committed more errors and produced more trouble, and caused more suffering than they have in any other one direction.

In the past, the chief study seems to have been to see what means could be found to control the people, to regulate the masses; and in doing this the masses have necessarily been left in ignorance and kept in subjugation and degradation, subject to frequent tyrannical and barbarous inflictions of corporal punishment, so-called, and to other merciless cruelties. But with the advancing civilization, and to a better and higher appreciation of the principles of Christianity, the horizon brightens and betokens the coming light.

To-day, all wise rulers, statesmen and teachers are asking the question, What can be done to restore to the people their inalienable rights, and to guide, direct and educate them in that way which shall lead them to their brightest happiness and noblest estate? To-day the moral dignity of human nature stands higher and exercises the nobler influences upon thinking men to a greater degree than ever before. There was a time when a government "of the people, by the people and for the people" commanded that deep attention and profound respect in the world which it does at the present time.

As we advance from tyranny towards justice, from monarchy towards democracy, from slavery towards liberty, from darkness, folly and error towards the light of wisdom and truth, we are apt to look back upon the past with somewhat of feelings of wonder and astonishment,—of regret. This is natural, and it is right and proper that we should do so. It is well to institute comparisons between the past and the present. If we make these comparisons properly, the past becomes one of our most valuable educational aids. In doing this, it becomes us to examine closely to see in if there are not still clinging to our garments some of the bad elements of the past. We shudder when we read of the execution of William Barker in 1821, for setting fire to a building in Salem, whose ho-

death was such that it became necessary to drag him from his cell to the place of execution. In reading of the cruelties still practised upon the freedmen our hearts sicken. Yet it is no uncommon thing for a stern and angry parent or teacher to take a little helpless boy or girl, and with rod in hand lead it forth to the whipping-post or place of punishment.

And for what? Why, for some petty offence for which, nine times in every ten, some one else may be more to blame than the child; it may be in some instances the very person who assumes to administer the punishment. It would be well for those having the immediate charge and care of children, ere they give the cruel and generally worse than useless blow, to examine well themselves and to see to it that they are actuated by no feelings of anger, of revenge, or wounded pride, for some broken rule or regulation or disobeyed order. Let the feeling only of love bear sway, actuated by an earnest desire to promote the best, highest and greatest good of the child.

When parents or teachers can do this there is no danger, as there will be no need of the rod. Any teacher who can so discipline himself or herself as to administer punishment in the manner indicated will never have occasion to resort to corporal punishment, for such an one would exert such a powerful influence over the children that all difficulties would be settled long before the rod would be thought of.

It is universally acknowledged that those persons are best suited to have control over and the management of others who have the best control over themselves.

The whipping of children, by whomsoever done,—parents, teachers or others,—taken as a whole, does vastly more harm than good. It is cruel and demoralizing, and at the same time does open violence to the rights of the child. What right have we,—what right has any one,—to assault the person of a child simply as a compensation for some trifling misdemeanor? If we would have our boys and girls grow into good men and women, let us recognize their rights while children, as these rights are just as sacred to them now as they will be at any time in after-life. Our duty is to guide, to direct.

For a long time resort has been had to corporal punishment, and while we are trying to raise up teachers who can get along better without it than with it, so our children are all the while becoming less and less in the supposed need of it; and though it is not positively forbidden in our schools, still the less there is of it the better.

School Committee.—GEO. G. PARKER, H. H. BOWERS, J. H. PUTNAM, EDWIN BATTLES, GEO. E. STACY, W. F. DRAPER.

MILLBURY.

Night Schools.—There have been schools of this kind the past year in the Union, in the Burbank and in the Park Hill school-houses. The anxiety of many of the pupils in these schools to learn has been exceedingly gratifying. The ambition of some of them has been to be able to read the newspapers, and the ambition of others to be able to transact business at stores and in other money transactions. On the whole, it is doubtful if any other three schools in town have been of equal value with these for the same length of time. Every human being seeks after something to exhilarate and increase his happiness. If he finds it not from reading and agreeable society at home, he will go in quest of it to the beer-shop and whiskey-saloon. If it were only a question of time, these night schools will pay.

In some respects the schools of Germany are the best in the world. The methods of teaching there deserve the attention of teachers here. A great feature in those schools is the amount of oral exercise through which the children are required to pass. Everything is illustrated and explained till it is understood. The mere memorizing of barren and isolated facts, so too common in our schools, is altogether discarded. Great attention is paid to the health of the pupil. He is required to sing, bathe, and perform gymnastic exercises, so that the physical as well as the intellectual part may be properly developed. During the summer holidays, excursions are made through various parts of the country, having for their object health, recreation and instruction. The classes are accompanied by their teachers, who omit no opportunity of instilling into their minds a knowledge of botany, geology and such other studies as come within the sphere of their rambles.

Now who cannot see that this is the way to lead those in the pursuit of life in the pathway of health and virtue and knowledge? How is it that so many are compelled to look back to their school-days with the Israelites did to Egypt, the scene of their misery and the house of bondage! Those days, if teachers were what they should be, should be remembered as full of sunshine, and be recalled with a thrill of joy. Very true, it is easier to ask questions as they are printed in books and receive parrot-like answers to them, than to arouse one's self to study each subject and make it clear. But who that has in him a noble nature will not be willing to give of his best energy when the reward is so rewarding and sure?

For the Committee.—E. Y. GARRETTE.

NEW BRAINTREE.

The first and perhaps most essential qualification for teachers is that they be thoroughly interested in and devoted to their work. It should never, if possible, be adopted as a mere means to an end. We have a right to require and expect that teachers in the employ of the town, at a fair price for their services, should give themselves to the work of teaching; that they should save their energies for this work, and during their term of service should neither engage in pleasures or employments that shall disqualify them for the work they have contracted to perform. In almost any school-room there is labor enough to exhaust most teachers, and they need all their strength, and every day fresh energies for their work.

Another important qualification in teachers is self-restraint. It is an old and very common saying, "to govern others well, it is necessary first to govern one's self." Scholars are quick to perceive inconsistencies in a teacher. If in passion, or in a spirit of cruelty or of revenge, any punishment is inflicted, not only the end of the infliction of punishment is not secured, but a direct injury is done to the pupil. Besides, the teacher loses his own self-respect, and of course thereby he loses the respect as well as the affection of his scholars; a loss which no teacher, if he regards his own interests or reputation, can afford to suffer. There never should be anything but the utmost fairness in the government of a school. Scholars, even the youngest, should be treated as though they had rights which, though they cannot personally assert them, yet do assert themselves to any just and fair minded teacher, by the very weakness of the little ones.

A teacher should avoid the indulgence of prejudice, with utmost care. It will be ruinous to his reputation of fairness. He should never permit himself to give utterance to his suspicions until he has fortified himself with evidence of the guilt of the scholar. It is very important to cultivate a high sense of honor in children. To do this the more effectually, the teacher should present an example of honor.

A good teacher will also find it necessary to put a restraint upon his feelings of kindness, his pity and forbearance, at times. When plainly a scholar deserves punishment, and the good of the school demands it, it will not do for the teacher, from the weakness of good nature or of pity, to forbear. He may thereby do a great evil to his school, and an almost irreparable injury to his authority. He may be kind and pitying in his sternness and severity; but it must be seen that the sense of duty controls. Indulgence in wrong in children, by parents or teachers, is always mistaken kindness; it is, indeed, the greatest unkindness; it is cruelty; it is sin. Again, it is very important that a teacher be possessed of the quality which we denominate good breeding. A boor, a boaster, one who is vulgar in his sentiments, his tastes or his expressions, one who can condescend

to the guilt and folly of using slang in the school-room, is wholly to be a teacher of children. As readily as a sponge absorbs water, a child, especially a boy, learns slang. If his parents talk slang, if he hears slang, if he sees slang, the child will learn and use slang almost from the cradle. In the school-room it should be unlearned, if possible, but never by example or connivance taught.

The good breeding of a teacher should show itself continually. In the school, his should be a constant example of the gentleman or the lady. His motions, his postures, his gestures, his dress, his whole bearing and appearance, should be suggestive of purity and high-mindedness. He should be a model of taste and of propriety. A teacher is teaching more than he sometimes thinks. His unworded and involuntary teaching is frequently more than those uttered. A frown will send pain to the sensitive heart of the child, a smile will bring sunlight and joy. Do not burden the now tender heart with too many frowns, do not indulge the sensitive nature with too many smiles. Be considerate as well as kind, be firm as well as yielding, be stern as well as lenient, be prompt as well as patient.

School Committee.—JOHN H. GURNEY, HOLLIS TIDD, C. B. FROST.

NORTHBOROUGH.

One of the advantages of the system of graded schools has been apparent and ought not to be overlooked. It is the comparative ease with which a large school can be managed by a single teacher. Thus a class of sixty or even seventy or eighty pupils can be arranged in two or three classes, either in the elementary or in the higher branches, and instruction given orally, or from a manual, to the whole class at the same time, thus avoiding the necessity of hurrying over the lessons or of wholly neglecting them. As an illustration we would call attention to facts that have come under our observation the past year. A class in natural philosophy was formed at the commencement of the winter term, in the Grammar School, consisting of twenty-five of the more advanced scholars; the recitation occupied no more time than had the class consisted of ten or fifteen. Had these twenty-five scholars been divided among the several Schools, where children of all ages are brought together, it is easy to see under what disadvantages they would have labored, and how much less time and attention could be devoted to them by a single teacher. And this hitherto has been the great defect in our Schools. The teacher has been under the necessity of dividing his time, sub-dividing, till the number of classes and recitations was inconveniently large, and lessons had to be hurried through, or wholly neglected, and then parents complained that their children were neglected, while the teacher and not the system had to bear the blame.

another instance. The Primary School in the centre district has contained at one time as many as eighty children under one teacher. Here, many of the exercises, such as object lessons, singing, exercises in gymnastics, &c., are general, adapted to the school, and the skilful teacher can gain the attention of the whole flock, while she gives them lessons on subjects suited to their ages and capacities, and is not interrupted by being called to hear the lessons of more advanced scholars.

There is another consideration not to be overlooked, and that is the comparative cost to each pupil, in a large and a small school. The school on Ball Hill consisted of eleven pupils and lasted twelve weeks, at a cost to each pupil of a little less than seven dollars for one term, and the school in the south district, containing twenty-three pupils in the summer term, and twenty in the autumn, lasted five months and one week, at a cost for the two terms of about seven dollars for each pupil; while the Centre School was kept three terms, eight months in all, with an average of about seventy-five pupils, the cost to each pupil being less by one-half than in the two former schools.

Chairman.—J. ALLEN.

NORTH BROOKFIELD.

We would suggest, as previous committees have done, the Normal Schools supported by the State at considerable expense for the training of teachers, as sources to which we may reasonably look for some of the teachers of our schools. We contribute to the expense of maintaining them, and we ought to secure, if possible, some of their benefits. It would be, of course, folly to suppose that education at a Normal School can make a good teacher of one who had no natural fitness for that calling, and it would be as idle to assert that a special professional training judiciously conducted is not advantageous to a teacher as well as to one who pursues any other business, either mechanical or intellectual.

It is a rather common error to suppose that if a teacher is pretty well instructed in the particular studies which are comprised in the course of the school he is to teach, it is of not much importance whether he knows anything beyond them. This is so far wrong that however accomplished a man may be, he would find on trial every one of his accomplishments to be an advantage to him, even in teaching a Primary School, and still more so in a school of a higher grade. And one reason for this is that besides those things which one deliberately undertakes to teach, and these may and should be many others than are contained in the series of the text-books used, scholars are continually learning from their teacher a great variety of things which he neither tries to teach nor they to learn, and these are valuable, worthless or pernicious according as his information is

ried and accurate or otherwise, his morals good or bad, his speech correct and refined or low and ungrammatical, his manners d and graceful or coarse and awkward. And there is no danger that things, which are learned unconsciously and without effort, though constitute the most valuable part of education, will overtax the physical powers, and produce any of those deplorable consequences which we are accustomed to hear attributed to excessive study, and however frequently they may occur elsewhere, we much more often than see among ourselves.

School Committee.—J. E. GREENE, LUTHER KERN, Jr., HIRAM KNIGHT.

PAXTON.

The laws of the State require an annual report from the school committee of each town; and the consequence of a failure in this particular is the loss to the town of their share of the State school fund. This year Paxton has never yet lost their appropriation, from any failure of duties of their committee, nor from any other cause. A receipt denies any town its annual appropriation from the fund, if such town does not sustain its Common Schools, for all scholars who draw money, six months of the year; while in addition to this, every town which fails in this particular is liable to be prosecuted for an amount equal to twice the largest sum which has ever been raised by taxation in one year for the support of schools. The appropriation from the State fund to this town,—since the fund itself has accumulated to the amount of millions of dollars,—is an approximate to one hundred dollars (\$66=\$94.05.) Now, as the length of our schools is, on the average, considerably less than six months in the year, we are brought at the end of the year where we can receive no more appropriations from the State. So, at the present year, whether the committee make any report or not, they must lose its share of the State fund; unless there should be an immediate change in the law by the legislature, of which there is no other prospect but their habit of frequently changing our school laws.

For the last year, the amount of money for each scholar in this town has been about \$5.80. This includes our appropriation from the State fund. Only seventy-nine towns in the whole Commonwealth, of thirty-two and thirty-four towns, cities included, have expended more money for each scholar, including their State appropriation, than the town of Paxton. And yet we are now classed among the few delinquent ones that no longer have our share of the two million fund.

If our scholars could be all gathered into three schools instead of thirty, each school having even then, on the average, less than fifty scholars, there would be no difficulty in having eight months or more of school

ally for all ; or we could have six months, with a much smaller grant of money than we now make.

But under the present system of five districts and six schools for the town, with less than one hundred and forty scholars who draw money, we see not how it is possible to make any essential change; and if any change should ever be made, which would gather our children to three different points in the town, some of these children must travel a much longer distance to school than they now do. The difficulties are easily presented, but a solution of them we leave to the wisdom of the town.

Against the principle of putting all authority and power relating to schools into the hands of the school committee, we have always contended and do still; and yet, such are our present laws of the State, that nothing but a special vote of the town, once in three years, can prevent such a result. Without that vote, the school committee have full authority to build or remove school-houses where they see fit, and divide the children for the schools as they may think best; and this they must do from year to year,—all district lines being entirely obliterated. In itself considered, there might be wisdom in such an arrangement, but we do not yet believe that the power of doing it should be taken by State laws out of the hands of the town, while the town must pay all the expenses which it might occasion. In the annual Reports of the Board of Education, extracts from the school reports of the towns in favor of abolishing the districts and putting all authority into the hands of the committee, have been published very extensively; while not a single extract from reports not favoring that policy can be found. This shows the general tendency to the concentration of power into the hands of a few, notwithstanding the boasted benefits of our school system in preparing the people for the more intelligent discharge of their civil duties; and from the gradual modification of the laws looking to this result we have no reason to expect anything essentially different from this for the present.

It is our pleasure to be able to say, that the schools of this town, for the last year, have been successful without exception; and both the teachers and scholars have our hearty thanks for what they have done. The schools have not been better for many years.

We do not believe that our scholars generally would suffer in comparison of their scholarship with most of those in towns where they have had more than six months of school. We say this, not because we think that our schools are long enough; but because we are convinced that our scholars do make as good improvement of what privileges they have as any others; and that they are really as deserving of "State aid" in their education, as those who have attended school a few weeks more in a

ear, and yet, in many cases, are certainly behind them in attainments.

School Committee.—WILLIAM PHIPPS, H. W. HUBBARD, E. W. CONANT.

PETERSHAM.

In reviewing the year, we are confirmed in the opinion expressed in our last report, that it is better to converse with the teachers relative to the interests of their schools, and point out to them their defects, and suggest to them the manner in which to improve during the session, than to wait and criticize them at the end of the year, when we can do them and do nobody any good. A successful teacher would doubtless be pleased to see his or her name in the report. But for all purposes, it would do the teacher far more good to have a recommendation from the committee. A poor school criticized would please fault-finders, because they would justify themselves and strengthen themselves in their unfavorable opinion of the committee. "There," say they, "we were reasonable in taking the course we did, for the committee agreed to it." We are inclined to agree with us, and acknowledge that we had a poor school. Now we do not propose to gratify either of the above classes. We do not criticize teachers publicly, for we said to them during the year as much as necessary.

"No farther seek their merits to disclose,
Or draw their frailties from "

Our mistakes chanced to be made amid the ever varying and perplexing conditions of the school-room.

The District System Abolished.—The school district system was abolished last year. The workings of the new system have not been without some friction, and yet, when all things become settled, we feel confident that there will be no desire or disposition on the part of any to return to the "old" is better than the "new." The world moves, and unless we move with it we shall "be left out in the cold." We must act according to the age in which we live. It is a great mistake to think that our fathers,—wise men as they were,—all honor to their memory, possessed all wisdom, and that it is indiscreet to depart in any respect from their ways. Still we believe that as the country becomes more civilized and the standard of education is raised higher, new methods must be adopted to meet these changed circumstances. A district system was, perhaps, good in its time; but it is not wise to cling to it when a better method is available. By the present system, every scholar is treated alike. A proportion of the money is the same, his school advantages the same. Now, one school does not have seven or eight months' term, and a

four or five, thus making a distinction whether one lives in a large or small district. All our children now are entitled to the same amount of schooling, which, for the last year, has been six months, though the general average for the last ten years has not been over five months. We number two hundred and sixty-three scholars, and have had eleven schools instead of fourteen as formerly. Some of these schools are very small while the largest does not average forty scholars. We are well aware that our town covers a large extent of territory, but we maintain it is better for the parent, better for the children, and decidedly better for the tax-payer and schools, to have at each school-house a sufficient number, so that an interest may be awakened, that one may urge on another, thus quickening intellect and rousing ambition, than to have but few in each school and one dull monotony through the day; where the classes will often consist of only one scholar, and, of course, no striving for the mastery will be called forth. In this respect it is of great advantage to collect as many of our scholars as possible at each place where a school is established, for we shall have better schools, better scholars.

We congratulate the town on the success of the schools the past year. It may be said that in some respects we have tried an experiment, and if so, it has been a successful one. Our teachers have labored efficiently and earnestly. The pupils have been diligent and made good improvement.

Teachers.—The office of a teacher is no mean office. It is beset with difficulties and responsibilities. The teacher is not subject to one unvarying rule of action. There must not be one uniform mode of instruction from which there is to be no departure, no variation. The same things, however good, must not always be said. Something new must be struck out. Something must be done not only to awaken an interest, but to sustain it. The railroad track is good just for one purpose, i. e. speed in one direction. The teacher who has one uniform range may accomplish something within narrow, set limits. The old method of question and answer, or what may be called "rule teaching," must soon be given up. The stereotype routine of the school-room must give place to life, and vigor, and invention. The school-room is no longer to be a place for the lazy. The drones shall be turned out of the hive. The workers only will be spared. Substance and not shadow must be taught; principles and not words. The dry page of the text-book must be enlivened, and vitality infused into the subject taught. The teacher must be an educator, a sort of enthusiast, yet one whose mind and heart are under the control of right principles and pure feelings. He must be awake and active to seize upon everything good and useful, and turn it to the profit of his school. He must study the most improved methods of instruction, and reduce these methods to practice, yea, incorporate them into his very being. He must associate with teachers and the best educators of the country.

The teacher who shall refuse to avail himself of the new spirit that has been infused into the vocation, or rather profession, will be outstripped in the race, and his place filled with others who possess the energy and the spirit which the times demand.

School Committee.—WILLIAM MILLER, J. M. HOLMAN, S. P. GODDARD.

ROYALSTON.

It is not to be forgotten, moreover, that the forfeiture of participation in this income does not void the heavy fine to which any town or city is liable, by prosecution, in which the Public Schools are not kept six months each year. Rather, it would seem, perhaps, that one object of such forfeiture might be, to incite to the more certain prosecution of delinquent towns. If those who believe in the fundamental and long established principles and provisions of our laws on this subject, but are prevented from their enjoyment by majorities in their respective towns, find themselves cut off also from the common bounty of the State, by the default of those majorities, they will come to feel that forbearance has ceased to be a virtue, nor hesitate longer in enforcing a legal redress,

In conclusion, the committee submit to the town the suggestion, that it is our wisdom at once to take in hand, with all the unanimity and earnestness we can secure, the inevitable issue of bringing about the legal abolition of the district system, and so reducing the number of our schools that we can attain, if not exceed, the minimum standard. With the large and profitable funds now in the control of the town, and with the character and standing of the town, and above all the welfare of the children at stake, how can we consent to await coercive measures?

School Committee.—E. W. BULLARD, F. D. AUSTIN, H. T. HANKS.

RUTLAND.

In concluding this report, we would make one suggestion. The law requires that we should have six months' schooling in a year; in the past we have taken little notice of this law; in the future it is evident that we must fulfil the requirements of the law, or lose our portion of the State school fund. But lay aside the loss of money. Is it not desirable that we should have longer and better schools? If so, how is this desirable result to be brought about? In the opinion of your committee there is but one way, and that is to abolish the district system entirely, and also reduce the number of schools in town. It is impossible, with the amount of money raised by the town for school purposes, to sustain the number of schools we now have the length of time required by law, if we employ

competent teachers to take charge of them. We ask your careful consideration of the matter, and hope that some action may be taken upon it at an early day.

School Committee.—GUILFORD WELSH, FRANKLIN HATHAWAY.

SOUTHBOROUGH.

We have charged our teachers from time to time to be thorough in all their school work, and we are happy to say that many if not all of them have by frequent reviews brought their pupils close to the mark, in some instances exceeding our most sanguine expectations. We have noticed no very gratifying improvement in reading and spelling which was in accordance with our previously declared wish. In our Primary Schools these cannot be too efficiently and perseveringly taught. We are not unaware however of the new scheme that is being agitated in educational circles. We would have them thoroughly grounded here and then other branches of study will follow more advantageously in their order. Some have excelled in a few branches only, others again in nearly all; so that it would be difficult to note any one as more excellent than its fellow.

To the praise of many of our teachers be it said, that they have been not only thorough but likewise very exact in their instruction. The children have been taught to make every sentence clear, grammatical and pure in expression. In geography the most modern and approved orthoepy has been adopted, so that in recitation many of our youth stand upon a level, to say no more, with city lads. "Parents as well as teachers should notice what kind of use is made of good language, as certainly as they should enforce the adoption of good language."

"Manners," we are told, "are the shadows of virtues, the momentary display of those qualities which our fellow-men love and respect." Many of our teachers are deserving high commendation for the efforts they have made to improve the manners of the little ones committed to their charge. The manners of the teacher operate powerfully upon the school. Children are great imitators, and with bright examples constantly before them their manners will be moulded into more perfect symmetry. Parents must not depend upon teachers to do all the work; it must be begun and continued at home, and then the teachers' aid will become a powerful auxiliary.

Our schools can never be brought up to the highest degree of efficiency when pupils are in and out at will. To attend school one day and the store the next, is not "the royal road to learning." What would be achieved if our teachers were to pursue this unsteady plan—now at the desk, to-morrow out of it, a few days this week and none at all next, a half-day here and a half-day there? If it is indispensable that little

children be punctually and daily at school to insure the best results, how much more important that those who have got beyond the rudiments and are grappling with what is deeper and more abstruse, requiring greater concentration as well as continuity of mind, should not lose a single hour. Another reason might be found in the fact that their school days are well-nigh spent, and that they can now but ill afford to lose one single opportunity for improvement. Napoleon once said to the members of a certain school, "My young friends, every hour of time is a chance of misfortune for future life."

We remark, in concluding this topic, that it will not avail the laggard if we make yearly accessions to our school appropriations. But some method must be devised by which we may arouse his ambition, so that he will not indolently submit to have a few reap the entire harvest spread out before him. We would have him jealous of his interest in this matter, and lose no time in making early appropriations of his share.

In a pecuniary point of view the expense of our schools is quite too heavy to admit of its privileges being slighted, but when we consider that the welfare of the community is ultimately concerned here, we say that its opportunities are altogether too rare and priceless to be suffered in part or a single instance to be lost.

School Committee.—RICHARDSON GODDARD, JOHN COLBY, JONAS FAY.

SPENCER.

We have been deeply impressed with the skill, the quiet, unassuming dignity, and the untiring patience with which some of our most crowded schools have been handled. We have seen better discipline enforced, and more complete and noiseless order secured, by a simple nod from the teacher, a glance of the eye, a slight motion of the hand, or a single word, not spoken above the ordinary tone, than by many an imposing and pretentious display of authority in other cases. There is a great deal we acknowledge in the circumstances of a school to affect its welfare, to assist or to hinder the teacher. Its location may be either good or bad. Its accommodations may or may not be adequate to its needs. Its pupils may be permanent or they may be shifting; punctual or unsteady in their attendance; and a score of like contingencies may more or less directly influence the result. Yet the essential qualities of a good teacher will assert themselves in spite of the most embarrassing difficulties, while the inefficiency of a poor one will turn success to failure. We have seen proverbially hard and intractable schools managed with ease and credit, while others of more favorable antecedents and better surrounding influences have suffered grievously in comparison. The difference could not

have arisen from the relative circumstances alluded to above, but from the relative genius and fitness which has been brought to the respective tasks.

A good teacher will generally possess an accurate and decisive knowledge of the branches of study required. It is extremely desirable for one who even knows but little, "to know that little well." We are often seriously embarrassed in this particular. Many candidates for examination have only general and shadowy ideas of the subjects in question, and while glib enough in the special rules and formulas and facts which they have memorized, they are sadly deficient as to the reasons and the underlying principles of things. In this exacting age, living, practical truths, with the ability to give them expression and to acquaint others with their nature, are more demanded; while mere forms and routine, like chaff and husks, are "spurned of men" and trampled under foot. To possess and to communicate a good thought with a conclusive reason for it if required, to define a position with clearness and then to maintain it firmly in spite of counter-questioning or dispute, is better than whole chapters of the set phrases and the parrot-lingoes so often rattled in the ears of long-suffering committees.

And this leads us further to remark that a good teacher will constantly seek higher proficiency in the required studies. Too many, we fear, of those who covet the position and the honor of instruction, never think of opening a text-book after the ordeal of the first examination is past, and the coveted "certificate" safely pocketed. This much we certainly know, that some second examinations are poorer than the first, and that very often the principal occasion for study while teaching, is to find a way out of some puzzling difficulty, where a forward scholar perchance has proved a little too sharp for convenience, or to "cram up," for a day or two, in anticipation of another engagement elsewhere. Now no other of the liberal professions can be a great while sustained upon this principle. How long would the ablest minister hold his congregation, who should fail to advance beyond his early course of theological reading? How many clients would trouble the lawyer who after entering the bar, adds nothing to the sum of his previous acquisitions? and what physician of repute dares to remain ignorant of the new developments and the changing phases that constantly mark the science of medicine? The richest treasures of learning will prove but a shallow pond, easily pumped dry, unless constantly replenished and fed from living fountains. How then can the teachers of our children, whose hands are either skilfully or rudely to lay the foundation of all their future attainments, and whose influence may virtually decide the ultimate destinies of many an immortal soul,—how can they escape the force of the same law? They have no business to rely upon the fruits of previous acquirement, in a duty which so constantly demands their best and freshest energies. A half-hour of faithful study, even once in a

fortnight, will add wonders of interest to the daily routine of exercises, and go far to relieve the dreary monotony of many a school-room that is now so much a prison to the noisy and restless group within.

- We have also noticed that good manners and a mild, gentle bearing have much to do with the success of our best teachers. Nothing can excuse an exhibition of ill-breeding or ill-temper in the presence of a school. A passionate, savage reproof is as fire to a blister; the rebellious spirit of a turbulent scholar it always kindles to a hotter pitch; and every display of the kind is generally accepted as a challenge to still further insubordination. Actual punishment, under these circumstances, is always a dangerous experiment; there is only a step between a heated, ungoverned temper and the gross brutality, that, under the strong impulse of an unguarded moment may do more evil than the remorse and the penitence of a lifetime can amend. The prime secret of good discipline lies far more in the commanding influence of a kind heart, in the calm dignity of a pleasant, gentle manner, and in the true firmness which is always mellowed with sunshine, than in the darkest frowns of grim austerity that ever froze a turbulent throng into silence. It is only in the strong, even poise of a self-controlled spirit that the magic power dwells, to control the wayward spirits of others. With even this condition, various modes of correction are occasionally needful; but their highest efficiency will be secured in the fact, always so evident, that the punishment is not mainly due to a spiteful ebullition of sudden wrath on the teacher's part, but to a painful, pitying conviction that such a proceeding is sternly required.

And this further quality is likewise prominent in a good teacher; namely, a patient, faithful regard to every point of duty, whether great or small. We would see conscience written in every transaction; we would see every feature of every day's labor, whatever its relative importance, controlled by an immediate sense of responsibility to God and to man. Let the teacher be ever so much interested in the question of good wages. We are glad to see this to any reasonable extent. It is idle to talk of "pure disinterestedness" in this particular; and when we hear the profession made, "Money is no object if I can only get a favorable situation and do good," we may generally ascribe it either to a very silly affectation, or to incompetency, thus self-acknowledged, to fill the desired position, or to render any service in it that is really worth paying for. All other conditions being equal, the same person will do more work and do it better under the stimulus of an ample recompense than when this powerful encouragement is wanting. We have always and earnestly plead for just compensation to our teachers; we have always approved any reasonable indulgence or privilege calculated to favor them. But when all this is done, we would see every day's labor made as truly a question of duty and of love as though the question of money had never had an existence.

With the conditions fulfilled as briefly stated above, we have never known the first instance of utter failure in teaching; we have never heard of any serious difficulty with unmanageable scholars. And who shall say that these are either impossible or even difficult attainments? We demur to the inconsistent though plausible theory that only those of "natural aptness" to the work—only such as are born teachers—are likely to succeed as such. This notion is contradicted by the concurrent voice of history, experience and good common sense. It is the plain teaching of these high authorities, that such a rule is not infallible, and that great achievements in good works may be wrought in spite of the strongest propensities in other directions. It is the peculiar province and glory of patient self-culture to change the strong bias of nature, to give it a better direction, and to enable it to win grander triumphs in higher planes of duty. We believe that almost any person of average abilities in general, may become an acceptable and useful teacher in some department, by due attention to the hints which we have ventured to suggest. And we assure all who are honestly striving to fit themselves for such a sphere of activity, that faithful laborers of the class we have indicated were never in more active demand than at present.

There has, through the past year, been a large attendance of parents and friends at the closing examination of each term. The several registers have also shown a considerable list of occasional visitors, who at various times have cheered both teachers and scholars with their presence. In this fact we discover one of the most hopeful signs of the times. The practice of informally dropping in for an hour to watch the proceedings and to listen to the recitations, we cannot help regarding as highly beneficial to all concerned, with no possible drawback or disadvantage that we can perceive. The constant liability to public scrutiny will all the while tend to prevent sloth and to stimulate a proper ambition to make a good appearance, thus putting a whole school upon the alert for improvement, while the visitor's mind is kept in more direct sympathy with the interests and welfare of those who resort to the place of instruction. We urge the people to continue this wholesome practice whenever their ordinary avocations will permit; and not to be bashful in speaking an occasional "good word" to the teachers for their encouragement when anything especially worthy of commendation is seen. A timely and judicious word of praise will rarely be thrown away upon its object.

School Committee.—M. E. WRIGHT, E. M. WHEELER, GEO. L. HOBBS.

STERLING.

Parents.—We cannot close this report without saying a word to parents, as to what is required and expected of them. We wish to call their atten-

tion particularly to the necessity of visiting the different schools, and ascertaining for themselves the actual condition of the same, rather than depending chiefly, as many do, upon the committee, or making up their opinion from the rumors or loose reports of casual visitors and strangers.

Let the parent follow his child often to the school-room, and remain there for hours at a time, and he will know how great or how little improvement to expect on the part of his offspring. Let him sympathize with the teacher in his or her many trials and perplexities, and he will be astonished at the interest he will take in the success of the school. He will feel that he is responsible no less than the teacher for the diligence of the pupil. He will be watchful in following up the instructions and requirements out of school, which are insisted upon within school. It will be his care to insure punctuality, promptness, and preparation in regard to the different studies which are assigned from day to day; and nothing short of sickness will be regarded as a sufficient excuse in detaining his child at home during the regular term of study. It would be better for all concerned to remove the child entirely from school, than to allow him to attend or not, according to his own wishes,—for any trivial reason to absent himself every now and then, or to ask dismissal, as many do, at recess, or near the close of each session. The interruption caused in this way, not only to the regular order of the school, but to the pupil's own studies, is serious. Instead of making great progress, habits of negligence and remissness are formed, which go with the child through life.

Our schools have suffered sadly, at times, in consequence of incompetency on the part of teachers; but not more sadly than they have suffered by reason of remissness on the part of guardians and parents. We see plainly the less evil, while the greater is often overlooked.

School Committee.—A. S. NICKERSON, SAMUEL OSGOOD, F. D. LORD.

STURBRIDGE.

We would not do or say anything to discourage any one who aspires to the teacher's honors, and desires to enter the profession on account of the opportunities it affords for benefiting the race; but we cannot, by word or act, or by our silence, give any countenance or encouragement to the idea so prevalent in this community, that any young lady who "can do all the sums in Greenleaf's National Arithmetic," and analyze and parse a sentence with great glibness according to the models given in "Greene's Grammar and Analysis," is, by virtue of possessing such wonderful knowledge, entitled as of right to be installed into the teacher's office by the school committee, if the prudential committee can be induced by fear, favor or affection to engage her for his school.

Something more than mere book knowledge is requisite to fit a person to be a teacher, and we respectfully but earnestly request prudential committee men to bear this fact in mind when they engage their candidates.

We do not see the necessity for such frequent changes of the teachers of our schools, nor admit the wisdom of such a course. When a competent teacher has been secured for a school, she should be continued in that school just so long as she retains the respect and confidence of her patrons and pupils. She possesses an immeasurable advantage over a new teacher, in that she has become acquainted with the dispositions, habits and tastes of her pupils, and can adapt her discipline and instruction accordingly. This knowledge, so indispensable to the highest success in teaching, the new teacher must acquire, and consequently a large proportion of the short term of school is wasted in acquiring it. Moreover, a teacher who expects to be displaced at the end of the first term, will not feel that interest in her pupils, and devote her energies so entirely to their improvement as she would do if she was sure of retaining her place so long as she was faithful to her trust. A little reflection will convince any candid mind of the truth of the foregoing propositions, and experience, observation, reason and analogy bear abundant testimony to the same. Teachers are so much like other people, that they desire such an evidence of an appreciation of their self-sacrificing labors as is afforded by continuing them in the same school so long as they can be useful there.

To teachers we would say, you need a more thorough preparation for your work, and a more intelligent appreciation of the duties and responsibilities of the profession.

We therefore advise you to pursue a course of study in some one of the Normal Schools of this State. It is the express object and purpose of these schools to prepare persons for teaching in the Public Schools, and their success has proved their utility beyond all reasonable doubt. Those graduates of these schools who have made a proper use of the advantages afforded them, and have entered upon their duties as teachers with proper motives, and with a determination to succeed, have met with the most encouraging success. Many of them are occupying positions of commanding influence. The demand for these graduates as teachers far exceeds the supply, so that there is no danger that the profession will suffer from repletion. Not only is the tuition in these schools free to those who comply with the rules and regulations, but additional aid is furnished by the State to deserving persons who need it. Without disparagement to others, we may add that we know of no other institutions where persons can be so thoroughly and so cheaply qualified for teaching as in the Normal Schools.

School Committee.—HENRY E. HITCHCOCK, M. B. ANGIER, DAVID WIGHT.

SUTTON.

Of apparatus for the school-room, a blackboard is of the first importance. It should be of generous size and well finished; its use will then be a pleasure and not a task. A small, rough and poorly painted blackboard is but little better than none, and both wisdom and economy require that such should be replaced by an article more attractive and serviceable.

There are but few if any studies taught in our schools to which the blackboard may not be made a valuable auxiliary, and the skilful teacher will find frequent occasions for its use,—as well for the purpose of his own illustration as for the examinations and practice of his classes. It is hoped that at no distant day our school-rooms will all be provided with large maps adapted to be hung upon the walls, and representing the more important geographical divisions of the globe. Thus conspicuously displayed, they would arrest many an otherwise idle gaze, and would furnish pleasant “loop-holes of retreat” to minds wearied with the severe lessons of the book. They would be accessible at a glance, and there would easily and quickly spring up a habit of referring to its proper position on the map the location of every place mentioned in the reading lesson or other exercise of the school. Almost unconsciously geography would thus be taught to all; and the maps looked upon and studied from day to day, would at last become, in all their features, as familiar as the face of a friend.

School Committee.—M. E. CROSSMAN, A. W. PUTNAM, A. L. STICKNEY.

TEMPELTON.

The scholars in the High School have been very diligent in their studies, correct in their deportment, and have made commendable proficiency. If our scholars were to be sent abroad to Academies or Private Schools, they would be quite fortunate if they found as good advantages for improvement in knowledge as they may now enjoy at home, while it is easy to see, by a little computation, that the cost of sending a few scholars abroad to such institutions would amount to more than the expenditure of the town for the High School, to say nothing of the disadvantages of sending young scholars away from the care and influences of their homes.

Primary Schools.—We can speak of our four Primary Schools as being on the whole in good condition. The importance of these schools should be more highly appreciated, and receive more of thought and interest on the part of parents. Here the children come fresh from home, at an early age, with their susceptible minds and various dispositions, with their diverse capacities and tendencies, and many of them

with defects and faults already apparent, and begin the process of school training which is the basis of education. The first steps are to be taken which lead on to knowledge, to character, to preparation for performing honorably and usefully the duties of life. We should look well to the foundation of the edifice we would rear. Generally the best scholars in the higher grades of school are those who start well in the rudiments of education.

School Committee.—LEWIS SABIN, EDWIN G. ADAMS, ELISHA C. FARNSWORTH.

UPTON.

Much depends on the wisdom and ability of the teacher; yet the success of the school is not entirely in his or her hands. Many a teacher has been discouraged, perplexed, and almost broken down under the indifference or covert opposition of parents and guardians of those under their charge. Insubordination has sprung from the opinion inimical to the teacher, expressed by the parent in a careless and thoughtless way, before their children. We criticize the schools in public places, and in presence of every grade of pupils. This habit leads to irreparable mischief. The school, like all things human, is liable to mishaps and mistakes. But these made the food of store-gossip, the idle talk to while away an hour, or to gratify the inquisitive and furnish materials to the tattling, produce consequences no human eye can follow. There are, in every life, moments when the slightest influences change its whole after character. This is especially true of those of the age of the older pupils in our schools. Interests so momentous, and influences so far-reaching, ought not to be jeopardized by a want of prudence. We appeal to you, as interested in the highest welfare of our children and a common humanity, to visit any carelessness or thoughtlessness in regard to the expressed opinion of schools with the severest disapprobation.

One other topic deserves your serious attention :

The Cost of your Schools.—In accordance with the law of the Commonwealth the town voted, at the last annual meeting, to allow each district to draw on the treasury of the town for means to continue their school, or schools, six months. The result has been, we have exceeded the appropriation made for the support of our schools, two hundred and eleven dollars.

Though among the first class of towns in our appropriation per scholar, yet, owing to our districts, some schools are overcrowded, and others very small. In one district, in the summer, there were but four scholars in its limits. For this reason we are spending our money most unwisely, and really get less from our appropriation than those towns

which raise very much less per pupil. As it will be seen by reference to the table No. 6, the cost per scholar, where there were only four actually in the district, was really twelve dollars per scholar. None will fail to see such prodigality of money is needless extravagance.

Let us add, our average attendance is far too low. There is a custom prevalent of taking our children from school when it is in the midst of a term. This is a loss to the school—an injury, as well as a positive loss, to the child, and needless discouragement of the teacher. These are losses little heeded now, but they will be regretted at last, when pupils come to see and upbraid our unfaithfulness and realize the character of our town is depreciated. The cause will be found in our neglect of the basis of all true prosperity—intelligence and morality. Let, then, no time be considered lost in looking for and working to sustain the interests of our Public Schools;—no expense too great which shall make them nurseries of intelligence, morality and piety,—our pride to-day and most cheering hope for time and eternity.

School Committee.—EDWIN NELSON, VELOBOUS TAFT, GEORGE S. BALL.

UXBRIDGE.

Meeting of Committee and Teachers.—We have long seen and felt the necessity of more concert of action with teachers, and a better understanding by them of the principles upon which the committee wish the schools conducted. We recommend that all the teachers in our schools meet once a fortnight or once a month during term time, and, if possible, the committee, or some of them, meet with them for the purpose of discussing such questions connected with our schools as seem calculated in any way to improve them. The best method of teaching and governing known to the most experienced teacher, can here be communicated to those of less experience; and by counsel and sympathy much may be done to elevate the tone of teaching, while a friendly acquaintance will be formed between teachers that can be made productive of great good.

School-houses and their Surroundings.—We are not to give you a lecture on school edifices under this head. But may it not be profitable for us to reason together, and talk about what we would like to see in and about our school-houses? If the school committee say “school-house,” it is expected a lecture is to be given to the town for not furnishing better.

But have you ever thought, as you have passed about town, how much time and expense have been lavished to make everything about our private dwellings pleasant and attractive? How many times have you said, in passing some cottage with beautiful surroundings, “See how lovely everything looks here!” Whether it is the mansion of the rich or the cottage of the poor, both, according to the owner's means, are fitted

for comfort and pleasure. We need not ask, Is this the appearance about our school-houses? But may we not ask, Should not this be the case? Should not the school-house itself, and the grounds around it, be even more pleasant and attractive than our own homes? It is only to inquire to know what the answer must be. Do men wear comfortable clothing to-day and go without to-morrow? Do you think that as you send your children from your warm and comfortable rooms at home you send them to spend the day in rooms uncomfortable and unhealthy,—uncomfortable, in many instances, in that they are open, cold rooms, and unhealthy for the want of proper ventilation?—sometimes heated too much, rendering the atmosphere foul and distempered; sometimes too cold for young life to flow forth in mental growth. For the health of our children, our school-rooms should be made to correspond in temperature and comforts with our homes.

Many children are kept from school because they soon get sick if sent. But this ought not to be so, and it is almost wholly owing to your neglect in not furnishing comforts in the school-room more nearly like those you furnish at home.

And is it a waste of time and thought to ask you to consider if the time has not come when all our school-houses should be surrounded by ornamental trees and pleasantly laid out yards. Besides making our school premises attractive, and setting pleasant things before our children, to awaken in them a love for the beautiful works of nature and art, there is another reason why we should have them made places of attraction.

We wish to maintain a character abroad for thrift and improvement, and there is nothing more noticeable by strangers as they pass along our streets, than our school-houses.

There is something in the very name that awakens in the passer-by a thrill and sensation that can only be accounted for by the vast importance attached to correct education. And in no department of life does the great truth, "by their fruits shall ye know them," press home with greater force than here. We believe that no outlay can be more remunerative than that expenditure which tends to concentrate thought upon our educational interests.

High School.—There never seemed to be so much interest in this school as at the present time. Your committee have endeavored to make it as profitable as possible. Our citizens feel that it is for their interest to give it a support sufficient to make it the valuable educational instrument it is designed to be.

We think we have somewhat lessened its usefulness heretofore, by allowing scholars to pass too early into this school from the District Schools. It is natural and just that parents should wish to see their children advancing as rapidly as possible, and it is not singular that they

should, in their anxiety, wish them to enter this school earlier than would be for their advantage. This is all the more pardonable with those parents who cannot afford to keep their children at school long enough to go through a full course of study. Yielding somewhat to the solicitude of parents, we have not raised the grade for entering as high as we believe the interest of this school demands. It should be borne in mind, that to go over studies in this school that can as well be learned in the District Schools, will be a waste of time. Besides, it would exclude those more advanced studies that properly belong to this school. It should also be borne in mind, that admitting a scholar to this school from the District School does not advance him in knowledge. It may be an actual disadvantage to admit him before he is prepared to enter. If he is not qualified, he must necessarily pass lightly over some portions of his studies in order to be classed, that really are the most important for him to know, and the very things he would be drilled the most thoroughly on in the District School, preparatory to entering here.

School Committee.—RICHARD D. MOWAT, C. A. WHEELLOCK, WILLIAM C. CAPRON.

WEBSTER.

As yet this town has tested only to a very limited extent the comparative merits of teachers who have graduated at our Normal Schools. But in the annual Reports of the State Board of Education, for several years past, the most abundant and unequivocal testimony is furnished by school committees in every part of the Commonwealth, as to the greatly superior claims of such teachers over all others. Such testimony it becomes us carefully to consider. It is very evident that the time is not far distant when Normal School teachers must supersede all others. It will not be policy for this town much longer to look at home for teachers unless such can be found as have been educated at a Normal School. And why should not our daughters who are expecting to teach, be thus educated, especially when the education is furnished at a very trifling cost? The State is supporting Normal Schools at great expense, and we are contributing our share towards this expense. It is this view of the subject which prompts the committee to recommend that all parents who have daughters expecting to teach, whether for a longer or shorter period, whether in a Primary School or in one of higher grade, should place them at once where they can receive the most thorough training and preparation for their responsible work.

School Committee.—GEO. J. SANGER, WALDO JOHNSON, C. W. REDING.

WESTMINSTER.

We remark that if parents want a good school, they must use their best endeavors to secure one. Provide suitable houses and apparatus. This is a matter altogether too much neglected. The houses in this town are on the whole very good ones, though a few of them could be improved by painting, and all could be rendered very much more attractive by the setting out of trees, and arranging the ground properly. Some may think this of no importance, but those who have had the largest experience tell us that there is a close connection between taste and morals, and if so, is it not desirable that those youth who have no instruction at home in regard to morals, and nothing to cultivate their tastes properly, should find all that can reasonably be afforded at the Common School? In regard to apparatus, maps, &c., it is but truth to say that our houses are sadly deficient. There should be a numerical scale, a good globe, a set of geometrical figures, and a system of outline maps, at least, which would vastly more than repay the outlay, by the facility with which a teacher could illustrate the various branches taught, and the ease with which they could be understood.

Farmers are not slow, usually, to avail themselves of the improvements that shall facilitate their labor, nor is the mechanic satisfied to perform his work after the old methods, but is constantly seeking new inventions and improved modes; and shall we not be as earnest to seek improvements in methods of education? In regard to teachers, it is sufficient for the committee to say that the best are the cheapest, and that whoever employs them should seek to procure those best adapted to fill the places they are to occupy. All teachers are by no means alike fitted to occupy the same position; hence, while two individuals may be eminently successful as teachers in certain schools, they might utterly fail were they to change places. It is, therefore, a difficult task oftentimes, for prudential committees to procure the right teacher, though they make commendable effort. Teachers should be brought before the committee early, so that in case of failure there would be ample time to secure others. Parents have a work as individuals to perform, and its simple neglect, as before hinted, will result disastrously. They are to see that children are at school regularly, and in season. What parent would not find fault were the teacher to be absent from her duty a part of each day by being tardy one-quarter or one-half an hour, or absent one day in each week? Who would expect that interest would not flag, and the usefulness of the school be much impaired, if not wholly destroyed? Such a practice, on the part of a teacher, would not be endured without complaint; and if so, is it not unreasonable for parents to keep their children at home for trivial causes, and expect rapid improvement? We often hear parents finding fault that

their children learn little or nothing, and this often where the committee have reason to believe that the teachers are faithful and persistent in their efforts to do their duty. They are accused of partiality not unfrequently, because it is found by one parent that another scholar in the same class and of the same age, is making more rapid progress than theirs; of course all the blame attaches to the teacher in their estimation. An investigation by the committee discloses the fact that in the one case the child is sent to school every day, and in season; is taught at home that the lesson must be learned; is inquired of by the parent each day, whether all the recitations were perfect, as well as the deportment, and is made to feel that it is dishonorable to be imperfect in either; while on the other hand, the register shows the attendance is very irregular, the tardy marks numerous, the deportment bad, which, of course, accounts, in nine cases out of ten, for much of the want of progress.

School Committee.—CLINTON WARNER, CHARLES T. DAMON.

WORCESTER.

Accountability for Property.—During the year a system of returns of school property, similar to that employed in the United States army, has been adopted. By it each teacher is required to render quarterly a report of every article of school property for which she is responsible. Everything furnished, and everything lost, destroyed or expended, is noted and accounted for, so that by an examination of the books at the office of the secretary of the board, an exact statement of all the school property belonging to the city, even to the minutest articles, may at any time be obtained. When anything is lost or broken, a statement of the facts of the case so far as they can be ascertained by the teacher is made, and in some instances where there was evident culpability, restitution has been exacted. Books, which are the property of the city, loaned to indigent pupils, are accounted for in the same manner, and a record is kept of the names of each child so furnished, and of his parents. The value of such a system, both as a check upon the waste of public property and for statistical purposes, will at once be seen by every business man.

I beg leave to close this report with a rapid survey of our system of graded Common Schools. At the age of five years the child is admitted to the lower Sub-Primary School, where he is taught his letters and the beginnings of reading. As soon as he begins to read very simple words he is promoted to the upper Sub-Primary, where he is drilled in reading, spelling and printing on the slate and blackboard. Here the field of the instructor begins to widen. Some of the teachers give great vivacity and interest to these schools by introducing counting, lessons on objects, gymnastics and singing. The child is promoted to the Primary grade in from

one to two years, according to his aptness. Here printing letters and numbers on the blackboard is continued, together with reading, spelling, gymnastics and singing. This grade is completed in eighteen months or two years, and then the pupil passes to the Secondary School where he commences the study of geography, and a more systematic work is begun with arithmetic and music; but written arithmetic is not commenced until six months or a year has been passed in this grade. Some pupils leave the Secondary School in eighteen months, but the majority of them spend two years there. I think that a year might be saved in this and the preceding grade by the division of the Secondary into two grades, and the re-distribution of the studies. I will endeavor as soon as possible to present for your consideration a matured plan having this object in view. Passing from the Secondary to the Grammar School, the pupil continues the study of music, penmanship, reading, spelling, intellectual and written arithmetic, and geography, and begins English grammar. Four years or less suffice to carry him through the two lower Grammar grades and he then enters the highest Grammar School, where he is supposed to complete grammar, geography and written arithmetic, continuing music, penmanship, reading and spelling, and commencing history, physiology and practical exercises in English composition. This grade occupies a year, and at its close the pupil should be prepared to enter the High School. The whole course requires for its completion from eight to eleven years. The High School course occupies from two to four years; and a pupil having completed that has received at the hands of the community a generous training extending through from ten to fifteen years;—a training which well supplies the place of, and exceeds in value a patrimony of thousands.

Superintendent of Public Schools.—B. P. CHEBOWETH.

HAMPSHIRE COUNTY.

AMHERST.

School days are too few and there are too many things to be learned, to justify any unnecessary delays. Hence our introduction of natural philosophy and general geography, both practical, both interesting studies; and both as much more adapted to the young comprehension than the abstract examples and rules of algebra, an established Grammar School study, as material changes are more readily understood than immaterial.

Said a lad of thirteen summers, after a three years' exhausting drill in Robinson's Arithmetic, requiring help at every step, testing the patience of father and mother, and wearing out his own, said he, on entering natural philosophy, "Father it's real interesting, and I can get my lessons all alone now!" The relief which he experienced seemed like entering into new life. The truth is, instead of the natural sciences, popularly treated, belonging peculiarly to the advanced years of the High School, Robinson's Practical Arithmetic, but for the necessities of the case, might well be voted that honor. Besides, not one in ten of the lads in our Grammar Schools, will probably ever see the third year in the High School, where natural philosophy is located. Sending them into the world with an education largely in unpractical theories and formulas, when the little they can get might just as well be of practical utility, is a criminal absurdity. In these views we are happy to find ourselves sustained by one of the first educators in New England, as well as by the "Massachusetts Teacher." Says the one, "We are crowding our children too hard in mathematics." Says the other, "The study of natural science is peculiarly fitted for children, for it falls in with their natural disposition." In reference to systems of study, it adds, "It is necessary to have much regard to the use which can be made of knowledge in after life. The principles of natural science lie at the basis of the various arts and trades, and yet most lads who leave the school to go into them, are utterly ignorant of these principles."

Promotions.—Should a scholar's promotion to advanced grades depend on a special examination, or on his known average standing in his class? If on a special examination, should that be a written one? For admission to grades below the High School, your committee report a relinquishment of written examinations. Knowing what we knew in the commencement of the year, we should have done violence to our sense of right and wrong, not to have done so. Knowing what we now know, we could not as honest men return to them. Written examinations for children unaccustomed to the pen, ignorant of framing sentences, troubled with spelling, and in a maze as to the position of capital letters, are known to be so uncertain in their results, to work so unequally and so unjustly, their continuance cannot fall short of a moral wrong. The history of written examinations will doubtless show, first, that the figures have not always been followed; and secondly, that when a first examination has failed to take in or promote the desired number, the standard of the second has been lowered to meet the exigency; neither of which can be regarded as equitable, if honest. Hence we are clear in our convictions, that the only just and safe principle of promotion to grades below the High School must be found in the scholar's average class standing, and not in his ability to memorize with the pen attainments in studies perhaps several years in the past. In requiring written examinations of children, we forget that sentence-making is an

art by itself, and requires long practice, in order to facility of expression. Heretofore these examinations have been required without previous practice in the class, so far as we are informed. The practice, however as regards the higher Grammar School classes, has been successfully introduced during the last term, with special reference to the exigencies of promotion day. The exercise has been kept mainly under the control of the committee, with a view to the utmost personal acquaintance with individual scholarship.

Your committee also report a removal of barriers to advancement, by freely granting to scholars of one grade the privilege of promotion to another, whenever a special examination shall evince the requisite qualifications. Several ambitious lads have already taken advantage of this arrangement. This is clearly a just principle, as well as sound policy, so long as one scholar is able to accomplish twice the labor of another. To keep back unnecessarily a bright, active, ambitious lad, at a pace with those of decidedly less capacity, we regard as not only despotism, but robbery. When a scholar has learned his lesson for the day, he will do no more in that line only under the motive of a clear track before him. Yet to guard against superficiality, the advancement should be made under a watchful eye and critical examinations.

School Committee.—NELSON SCOTT, R. B. BRIDGMAN, AUSTIN EASTMAN.

BELCHERTOWN.

The custom of authorizing prudential committees to employ teachers, we believe to be a fruitful source of evil to our schools. A more intimate acquaintance with all of the teachers in town, and also of the schools, enables the superintending committee to employ teachers best adapted to the schools which they are to teach. While the present system makes them responsible for the success of the schools, it gives them no voice in the choice of teachers, except the power to accept or reject the candidates who are presented for examination, ignoring entirely the question of adaptation. Prudential committees, who consult as they believe the highest interests of their several districts by employing the lowest-priced teachers, enter upon a dangerous, experiment, which sometimes succeeds, but oftener fails. Experience and ability should be sought in preference to every other consideration. Another source of evil is the continual change of teachers, very few remaining more than one term in the same school.

Last year the whole number of different teachers employed in eighteen districts was thirty-two, only six of whom were employed both terms in this town, and only two both terms in the same school. By following this course, at least one-third of our money is squandered.

School Committee.—GEO. O. HANNUM, PHILO D. WINTER, ELIOT BRIDGMAN.

CHESTERFIELD.

During the past year the committee have reflected much on the state of the schools and the means of improving them. Nearly all the text-books in use, though valuable in themselves, are so loaded down with facts that a child can seldom make a selection of what should be memorized, and the young mind therefore must bear an unnatural burden annexed to its valuable acquirements. Mental cramming is not what we want. It is scarcely a part even of education, and is certainly not a valuable part. The more important facts in science and art, instilled into the mind of a child, made active by skilful teaching and efficient drill, will do more to educate that child than the whole of that class of facts just memorized; for it is not what a child stores up, either voluntarily or by forced drill, but what it uses and readily combines that makes its education.

School Committee.—ALBERT NICHOLS, ORSON M. PEARL, THOMAS PORTER.

CUMMINGTON.

In recapitulating we would say our schools generally the past year have been prosperous, having had with slight exceptions an excellent corps of teachers, three of whom we have heretofore mentioned were graduates of the State Normal School at Westfield, and have given us abundant testimony of the superiority of the method of imparting instruction practised in that school. These Westfield teachers, as well as some of our own furnishing, have governed their schools well, chiefly by moral suasion and seldom by using the rod. A few years ago we had a large supply of teachers and some to spare; now it is with difficulty that we can find such teachers as we need. May this not be owing in some measure to our having neglected to maintain a select school in town as we formerly did. Many of us can well remember the time when our schools were instructed in the winter exclusively by male teachers. Now they have to a great extent gone into the hands of females. Whoever will consult the statistics of the Public Schools in this State at the present time, will find that the proportion of female teachers to that of male, lacks only a small fraction of being seven to one; and the proportion in favor of the females is increasing every year. And as our schools will soon pass entirely into their hands, should not every effort be made to sustain and aid them in their noble work?

The fact is not to be concealed that in the management of schools there is too much show and too little substance. Teachers are not careful to teach thoroughly and build on solid foundation. The mind of the pupil should be thoroughly drilled in every branch. A knowledge of mathematics continues to be the chief end and aim of many scholars. Having

respectably passed through a mental arithmetic, they enter a higher one, and canter through it as a colt canters through a pasture; then they jump into one still higher, and out of that into algebra, valuing themselves competent to do more than Archimedes, who said, "Give me a spot whereon to place my lever and I will move the world." So in grammar; they rush through it, and like a comet fly into analysis or the Latin before they understand thoroughly the first principles of etymology, flattering themselves to know more than Murray ever did. We need more system, more study and more thought in our schools. Teachers are quite too apt to yield to the great temptation of urging their pupils forward for the purpose of brilliant effects. They will sometimes do but little for the last three or four weeks of their term, except to drill their scholars for a brilliant examination. If they succeed, they are applauded; if they fail, woe be unto them.

Prudential committees and town committees should perform their duties with promptness and efficiency; should engage all their teachers at the earliest possible moment, as the best teachers are early sought and their services secured. They should see that the school-rooms are in readiness, fuel prepared, and everything in order for the commencement of the school; also that the teachers are provided with suitable places to board. It is impolite and barbarous to compel young ladies to beg in summer, or plunge around in snow drifts in winter, to find a place to stop overnight. They should especially see that each school in town is in session long enough to meet the requirements of the law, and thus secure to the town its share of the State school fund, which is to be apportioned and distributed according to a statute passed by the legislature in 1865, and takes effect in the coming July. To lose your share of this fund would probably deprive the town of a sum sufficient to pay all your teachers' wages for nearly one month.

For the Committee.—J. W. ROGERS.

GRANBY.

The best practical test of the efficiency of a school is found in the character and extent of the interest manifested by the scholars. The school-year has been a busy one, and numbers have been aroused to a consciousness of their increased advantages and of their powers in mental effort. While some engaged at once with great enthusiasm in the thorough work provided for them, others were slower to discover its attractions; and not until results began to appear to their disadvantage were they quickened to the earnestness of effort in which they are found at the close of the year. A few,—such may be perhaps always found,—have manifested chiefly restlessness to restraint and indifference to study. Among the rea-

sons influencing these exceptional delinquents, the committee have observed the notion entertained by some of the pupils, and perhaps by still a greater number of ill-advised parents, that this grading of the schools involved an abridgment of their proper liberties. The mistake here made is not as to the fact that the liberties which pupils naturally desire are abridged, but in the estimate formed of the fact itself. The education of children requires the adoption of methods such as they would not select for themselves. Experience in every department, and in every part of practical education, shows that the work must be in a great measure compulsory,—harsh as the sound of the word itself may be. A father acts upon this principle in the industry which he requires of the child. The boy is not conceived competent to decide for himself what work he shall do. The apprentice is not to take what part of his trade his own judgment or inclination may elect. In this respect the schools should be planned with a wisdom, at least equal to that required in the domestic training of a farmer or mechanic. The proper apprehension of personal responsibility, a high sense of obligation, is necessary to dignified and persistent effort in every worthy pursuit, and especially in the purposes of education. The notion of liberty which is in conflict with the order or industry of the school, is only ruinous to every worthy trait of character as well as success in study.

We found in the District Schools scholars studying physiology who could not fully comprehend the author's meaning,—scholars in grammar who could neither read nor spell correctly, much less apply the laws of grammar to the proper use of our language,—scholars in "written arithmetic" who could not correctly solve one-third of the examples in Colburn's First Lessons,—scholars in United States history who could not tell us the name of the country in which we live or upon which hemisphere the United States is located. Does it profit a child to study history before he is thoroughly acquainted with geography, or study grammar before he can read and spell our language well? Till nearly the close of the winter schools, we were unable to find in one of the District Schools a scholar who could correctly solve all the examples in Colburn's Mental Arithmetic, or pass a creditable examination in geography; and we have not often seen a good reader or speller among the pupils of the District Schools. When we see scholars in these schools who are good readers and spellers, who have a thorough knowledge of geography, written and mental arithmetic, and can write a sentence for grammatical study so that their most intimate friends can read it, then, and not till then, will we recommend such pupils to study grammar and history from text-books. We have directed teachers to employ leisure time in teaching some of the prominent facts of United States history by topics, free conversations, questions and discussions with the whole school. This

course, where pursued, has in our opinion been fully as advantageous to the young pupils as the course of study from a text-book.

School Committee.—S. M. COOK, Dr. C. B. SMITH, E. N. DICKINSON.

GREENWICH.

When the interests of civil society, from the town organization up to the government of a mighty republic, depend not upon the edict of a king or an emperor, but on the will of a majority of the people, ignorance and a want of proper education for the business of responsible life are a dangerous element. Our children need to be educated mentally and morally for the work of usefulness which eventful times are demanding, as those of you who are older shall be passing away. The time is coming apace when the present generation of youth will be called to be actors in the midst of life's stirring events,—when they will have an influence in community,—a voice either for or against its best good; and no citizen in our townships, no philanthropist, no patriot can consistently be indifferent to the future character of the young who are to come upon the active stage of life, as to how they will be furnished for the work of giving direction to the public welfare committed to their hands. Our schools, supported from the public treasury, patronized by the State and watched over by its vigilant eye, accessible to all, pouring their treasures of knowledge and wisdom into the minds of all classes, are among the great educational forces of the day. As intelligence and mental growth are preferable to ignorance and mental dwarfishness, as virtue and aspiration after what is good and noble are better than vice and a seeking after what is low and grovelling, our schools, if they are what they should be, are among the richest blessings to our Christian civilization,—the palladium of our choice rights and privileges,—the pillars of our national strength. Therefore it requires no argument to show the reasonableness of interest in them,—that they should be watched over with jealous care, guarded with a vigilant eye, and sustained with a generous and cheerful heart.

School Committee.—E. P. BLODGETT, C. POWERS, J. B. ROOT.

HADLEY.

The Working of the Graded System.—The success thus far has been quite equal to any reasonable expectation. There have been some disappointed hopes, as there always will and must be. But there is that in the nature of the system, fitted to stimulate industry and fidelity in school duties, the progressive operation of which it has been pleasant to witness.

There has been some increased inconvenience in attending the higher schools; but this, we are persuaded, has on the whole been much more

than counterbalanced by the increased facilities of classification and study.

It is worthy of special notice, that one of our smallest and most distant outlying districts has furnished more scholars the last year for the High School than any other except two of the central ones. The scholars have boarded at home, walked or rode three or four miles, morning and evening daily, and won a fair share of distinction for scholarship and deportment. All honor to district No. 7, the banner district in this respect, of the town. The young people who contribute to this pre-eminence, it may be hoped, will be well reported of hereafter.

With the progress of time, our system will become more and more complete, and the difficulties attending it will diminish. Distances will remain the same, but will be easier, in the mind, to surmount.

For the last ten or fifteen years the schools of our State have been receiving important modifications, more particularly with reference to gradation. The towns are providing more and more for their own wants in this way; and have far less occasion than formerly to send their sons and daughters out of town to finish their education. Many academies have been converted into free Public Schools, and many select or subscription schools have disappeared before the march of the system of gradation. And this has all been in keeping with the spirit of our republican institutions, which is to give to all as equal a chance as possible for mental culture and general prosperity. Under this order of things the poor have abundant occasion for gratitude that the means of education are so liberally furnished to their children; and the rich have equal reason for joy that it is in their power to do so much to help their needy neighbors and fellow-citizens. To what better use can property be appropriated than that of moulding and furnishing young minds for a high and useful career? Our first ambition as citizens of this ancient and honored town should be, not to possess the greatest wealth, not to show the best farms, the largest produce, the nicest manufactures, the finest stock; but the best men and women,—the most intelligent, virtuous and useful. Here, in fact, is the true foundation for all desirable growth in material wealth and happiness and honor.

School Committee.—W. H. BEAMAN, ROWLAND AYERS, EDWARD S. DWIGHT.

HATFIELD.

School-Houses.—Your committee feel it to be their duty to persevere in calling the attention of the town to the great evils arising from neglect to provide better places for some of the schools. We think we are prompted to this by a feeling of benevolence, i. e., a desire to guard the health, and promote the physical, intellectual, and moral well being of the

rising generation. It is not a wonder that that fell scourge, consumption, decimates our population, and that many others are invalids. There is cause enough in the small, unventilated, incommotions rooms in which some of our schools are kept. The seeds of disease are early sown, and in the very bloom of manhood and womanhood comes the bitter fruit. The private dwellings in this town are an ornament and honor to it; but this cannot be said of the external appearance or the internal arrangements and accommodations of some of the buildings in which we are attempting to educate our children. We consider them not only a fatal injury to the taste and better aspirations of the pupils, a means of preventing the growth of a public spirit, and of killing out even the innate desire of knowledge, but undesigned instruments of scattering through the town, sickness, suffering, death. Youth is the time to lay in stores of health for the heavy duties of active life, and for old age. But what chance has a child for this, who is crowded into a little room, and made for six long hours a day to inhale the deadliest poisons and to sit in the most constrained positions?

To show that we are not drawing upon our imagination for these pictures, let us take some facts. The lower room in the school-house in the Hill district, is twenty-two feet long by twenty-one feet wide, and seven and a half feet high. The number of cubic feet of air which that room contains is 8,465. The number of pupils in that school last term was forty-three. The room has no apparatus for ventilation. Physiology tells us that, in order to health, each person needs seven* cubic feet of air to inhale each minute. God has furnished pure air in the the greatest abundance. All out doors is full of it to the height of fifty miles. Let these forty-three scholars crowd into that school-room. Twelve minutes have not passed before that quantity of air has been inhaled by those pupils, the oxygen, or life-sustaining property, taken from it and incorporated with the blood, and carbonic acid, which is a deadly poison, and hydrogen, made to take its place. Suppose twelve minutes to have passed. These scholars must now take that impure and deadly air into their lungs and breathe it over, in the hope that some of the oxygen was left on the first breathing. And the next twelve minutes breathe it, still more impure, again. Not getting from it what the system demands, the pupils become restless, feel an aversion to study, have the headache, are weary, and lose their ability to attend to the instruction of their teacher. To require children to study and bring out the products of the brain under such circumstances is the same kind of insanity as to put a spider on a bed of live coals and ask it to spin its web. The spider will summon all its powers

* Dr. Cutter in his Physiology says, "No physiologist pretends that less than seven cubic feet of air are adequate for a man to breathe each minute, while Dr. Reid allows ten feet.

to leap from that deadly place. So all the powers of nature in a child, thus shut up, will struggle to get that child out of that poisonous place into the pure air. The restlessness, the headache, and all the discomfort of the child, are so many wise provisions of nature to secure its life and health.

High School.—Under this head we say that it impresses itself upon us more forcibly this year even than last, that as a town we are not doing our duty in respect to the facilities which we afford the young among us for education. We live in a country and an age when knowledge is not only usefulness, happiness, power, but a necessity. Two hundred and fifty years ago Shakspeare said: "Ignorance is the curse of God: Knowledge is the wing wherewith we fly to heaven."

John Locke said: "The difference to be found in the manners and abilities of men is owing more to their education than anything else."

Addison: "An industrious and virtuous education of children is a better inheritance for them than a great estate."

Benjamin Franklin: "An investment in knowledge always pays the best interest."

Edward Everett: "Education is a better safeguard of liberty than a standing army. If we retrench the wages of the schoolmaster, we must raise those of the recruiting sergeant."

The inspired penman tells us that "Wisdom and knowledge shall be the stability of thy times, and the strength of salvation."

While the town is furnished with a sufficient number of Primary Schools, it has not one which is suitable to carry the scholars forward and fit them for the increasingly responsible duties of useful, intelligent and virtuous citizenship. Everything valuable pertaining to the town in the next generation depends upon the fitness which those who are now children shall have for their responsibilities. What has passed for an education with us, is far less than will be needed by them. The educational standard in all of our towns is raised. A more complete education is demanded for the performance of private or public business, for wise action on social or political questions, and for filling offices of honor and trust. Ignorance puts the ban upon one and shuts the door of opportunity.

The pupils in our schools are, so far as qualifying them for citizenship goes, a trust committed to the voters of this town. The law makes their education the care of the town. This it does because their education is a public benefit. Property is enhanced in value if it is an intelligent and virtuous community. It is more secure. The social privileges afforded by it are better. There is not a worthy interest which is not promoted by the education of a community. So that it is just that all, whether parents or not, should participate in bearing the expense of education. All are benefited. And it is easy to see that the education must be such

as is suited to the times, in order to secure the benefits. More is now demanded for enlightened citizenship,—therefore more must be done to prepare for it. We are really pushing the children, now on the stage, forward to fight the social battles of their time,—to cope with infidelity, intemperance, vice in all its forms, and social and political questions of the gravest importance. The whole world is brought within speaking distance of them, and they must know more about it than we do. They will be met in their conflicts by skilled antagonists, and shall not we furnish them with the skill and the arms needed for an equal contest? Four years ago you would have thought it madness to send out soldiers without equipments? Is it any less madness to send our children unequipped into the battles that await them?

There is sometimes a concise kind of logic that leaps forth, Minerva-like, from the deepest convictions of the soul. It is too condensed for the intellect to unravel and articulate. Dr. Johnson, when disputing with a fatalist, uttered the sentence, "We know we're free, and there's an end on't." President Lincoln when pushed on the subject of slavery, cut the gordian knot by the sentence, "If slavery is not wrong nothing is wrong." These are expressions of the profoundest convictions of the soul. But no more so than this:—If the education of the young up to a point to fit them for duty in the sphere in which we place them to act is not a duty, nothing is duty. This is an impulse, an instinct of the Christian heart.

From some source must come teachers for our Common Schools. During the last year we had the services of fourteen, only two of which were from this town, and we furnished only two for the Common Schools in other towns. Is it not our duty, as well as privilege, to furnish as many teachers as we have the services of? Suppose every town in the State was as deficient in furnishing teachers for the Public Schools as we are? How soon our system of education would fall? Other towns are glad to furnish us teachers, for they will have schools to fit their youth for this office. But do we qualify our youth to fill their teachers' chairs? Is not here a double wrong, first to the school system of the State, secondly to our own youth?

School Committee.—JOHN M. GREENE, RUBEN H. BELDEN, DANIEL W. WELLS.

NORTHAMPTON.

The practical question then that addresses itself to every citizen of the town is this, viz.: How shall we make our schools such that they shall secure the desired ends? To answer this question we beg leave to offer some suggestions.

First. We must have more and better teaching. It requires but a very limited range of acquirement to enable a person to hear a recitation, especially if nothing more is included in it than precise verbal statements in the exact language of the text-book. It is nothing but a sheer misapplication of language to call such a mere mechanical process teaching. It lacks its first essential element, and is as powerless to stir the intellect of the pupil as moonbeams are to penetrate and melt the massive icebergs of the Polar Sea. Teaching to be *teaching* must have in it what the old Methodist divine told a young brother who had just commenced preaching his sermons lacked, "more likes," or in other words, to be diversified and made intelligible by illustration, simple but apt. Obviously the interests of our schools demand more teaching and less mere "hearing" of recitations, and if our schools are ever brought up to that standard by which their superiority will be indisputably established, it will be in great part due to the warm and generous cherishing of our school system, and by retaining in our schools as teachers only those who know how to teach and who we are satisfied do teach. The services of such a teacher for a single term will do more to give character to a school in the results secured, than can be accomplished by another though the school were continued the whole year round, and as a matter of economy merely the town would be greatly the loser by the failure to retain such a teacher, even though it involved an increase of compensation equivalent to twice the amount for which one of an ordinary character could be procured.

Second. More attention should be given in our schools to the manners and habits of our children.

Formerly special attention was given to propriety of conduct and the rules of decorum out of school hours, and when away from the teacher's observation. Children were systematically taught to pay respect and deference to age,—“to rise up before the old man and honor the hoary head.” Indecencies of speech or behavior, profaneness and disreputable conduct of whatever character were regarded legitimate subjects for the teacher's attention, and as a consequence parents had little fear that their children would be contaminated by social companionship at school. And the need of such supervision now is all the more urgent from the fact, that in many of our schools a large majority of the pupils come from families in which all the influences and associations at home are adverse and prejudicial alike to refinement of conduct and character. The teacher who would see the earliest and richest fruits of labor bestowed, has here the most promising and hopeful field in which to exercise the energies of mind and heart, and were it not seemingly invidious, we could name particular schools which by general consent furnish the most ample illustration of the truth of this remark.

Third. A more rigid discipline is demanded in our schools.

Obedient parents are every day to be met, but this is not the age of obedient children.

"Do you see that child?" said a French courtier to his friend. "That child rules the realm." "How so," said his friend. "That child rules his mother; his mother governs his father, and his father is nominally king of France," was the reply. Unaccustomed to the practice of submission to parental authority at home, the restraints of the school-room are irksome, and quite too often their restiveness under control is kept from breaking out into open defiance of the teacher's authority only by a salutary fear of punishment. It should be fully understood, that within certain limits the teacher is sole and undisputed master of the situation and the executor of his own will, and up to that point where those limits are reached, no interference with the teacher can for a moment be tolerated. The regulations that are indispensable to the orderly arrangement and proper control of the school are, and of right should be in the teacher's hands, and it surely needs no argument to show that there also should rest the necessary means for their enforcement; otherwise they are divested of their sanctions, and have only the power and influence of simple advice. The injudicious and unwarrantable interference of parents with the discipline of the schools, in two or three instances, has well-nigh neutralized the good that would otherwise have been accomplished, and will doubtless operate to the disadvantage of whoever may have the charge of them the ensuing year.

Fourth. The improvement of our schools demands greater regularity of attendance.

The loss of a single lesson is apparently but of very slight importance, but that very lesson may contain cardinal principles, which if misunderstood or but imperfectly comprehended, will embarrass the pupil in his entire subsequent course. We cannot enforce regularity of attendance, but we hazard nothing in saying that no pupil ever reaches a high standard of scholarship, or can by any possibility obtain the best advantages that our schools afford, unless the systematic course is thoroughly mastered and pursued from beginning to end without break or interruption. To this more than to any other cause is attributable the incoherent, slipshod methods of recitation, mortifying to the teacher, to whom no blame can attach, and painfully wearisome to the listener, who not unfrequently without consideration estimates the value of the teacher's efforts by their apparent results. We fully believe that one-half at least of the benefits that might be derived from our schools are thrown away on account of the want of interest manifested by parents, who either without cause or upon frivolous pretexts allow their children to be habitually absent from school. So far as the progress of the child is concerned, habitual absence once or twice a week is well-nigh as ruinous as keeping him from school altogether.

What shall we do with the foreign element in our Public Schools? This question is beginning to excite the gravest consideration on the part of the friends of education, and we shall be pardoned if we give it some passing notice. The theory of the State, so far as its legislation has borne upon the interests of popular education, has been that no exclusive privileges were to be conferred upon any class, but that all were alike to share in its advantages, irrespective of race, or clime, or color. Its object is, by avoiding discriminating legislation, to fuse together the incongruous elements in the State and make us strictly a homogeneous people. We cannot sequester them from intercourse with ourselves or our children, without virtually putting them under the ban, and keeping alive among us a caste prejudice utterly at war with the spirit of our republican institutions. What we need to do with them is to Americanize them, and this can be done only by a generous tolerance of their faults, till their better nature can be awakened to see the good and right and true. If these results are to be gained, our schools must be used by all classes, native and foreign alike. And while we ought not to be indifferent to the coarseness and ignorance and degradation that exists, it were well for us to remember that these evils are not cured by pharisaic self-complacency or the exercise of a rose-water philanthropy which shrinks from personal contact with whatever shocks the sensibilities or offends the taste. Native and foreigner must be educated together, even if the child of foreign parentage does appear at an immense disadvantage when placed by the side of his native-born competitor. Much of the superiority manifested by our American children is due to the favorable surroundings of home, and the withdrawal of those influences from our schools would be productive of incalculable injury. That there is really no intellectual disparity between the different classes is fully proved by the results as witnessed in the schools in Florence, and in our own higher grade of schools; and we sincerely deprecate any course of action which shall tend however remotely to their separation, or to widen the distance between them.

School Committee.—H. H. CHILSON, WM. D. CLAPP, SIDNEY STRONG, S. E. BRIDGMAN, A. L. WILLISTON.

PLAINFIELD.

Some of our schools have not kept as long as we have wished, and while we do not believe in employing cheaper teachers, we would suggest that the districts expend the whole of their money every year, instead of leaving a surplus, as is often done; had this been done the past year in every case, we think we could have reported six months' school in every district, which would have secured to us a much larger sum from the State, for the next year; we wish it understood that whatever money

is left over by the several districts, does not belong to them individually, but goes into the appropriation for schools for the next year to be divided anew; this has not been the usual practice in this town, but we would recommend that it be in the future.

School Committee.—SETH W. CLARK, STEPHEN HAYWARD, Jr., THADDEUS ROOD.

WESTHAMPTON.

In our last report we raised objections to serial studies, especially geography. Another year of observation has served to confirm us in our opinion, that it is better to let that study alone till the pupils are sufficiently advanced to take the last of the series, and devote some of their earlier years to the study of the natural sciences. In the education of children, we should seek for mental culture, preparation for the business they will be most likely to follow in after life, and general information. The principles of the natural sciences are at the foundation, or enter into, agriculture, and the various arts and trades. Yet most of those who stop short of what is termed a liberal education, go into their business ignorant of these principles. An intelligent teacher can do much to awaken thought in very young children, and draw instruction for them from things with which we come in daily contact, and which enter into our very being.

Chairman.—ELEAZAR JUDD.

HAMPDEN COUNTY.

BRIMFIELD.

A Normal Class.—We are authorized to say that an advanced class of pupils will be organized in the High School, where especial attention will be given to the English branches, as well as to the "theory and practice" of teaching. From our acquaintance with these teachers and their mode of instruction, we can assure those who are anxious to prepare themselves to teach in the Public Schools, an opportunity will be offered here which they cannot well afford to lose, and we earnestly recommend to them to avail themselves of its advantages.

Teachers' Meetings.—By invitation, Mr. J. G. Scott, a teacher in the Normal School at Westfield, recently met several teachers and friends of education, and gave a few lessons on the theory and practice of teaching, illustrating very briefly the analytical method adopted at the Normal

School. These exercises excited much interest; and it was voted to continue these meetings for mutual improvement, taking up teaching exercises, and discussing such questions as bear more directly upon the the best interests of the school. The value of these meetings cannot be overestimated. The teachers become better acquainted with each other. Here they may congratulate each other in their successes; they can sympathize together in their perplexities. Their interests are identical; their responsibilities are the same. Here may be discussed the best method of governing the school,—the best method of communicating instruction.

School Committee.—WARREN F. TARBELL, JOSEPH L. WOOD, EZRA B. WELD.

CHICOPEE.

At the last annual town meeting the sum of \$850 was generously appropriated for the purpose of furnishing certain districts with maps, books of reference, and school apparatus. A portion of this fund has been expended, and maps and tablets have been procured, and so far these wants have been supplied. Reference books and school apparatus will be supplied so soon as the districts will make suitable provision where they can be placed and properly protected from injury.

We would also suggest to the prudential committees to provide the Primary Schools, and all the schools where there are young children, with some suitable school apparatus, such as blocks, geometrical figures, plates, and even pictures, which will not only instruct, but which will relieve the tedious monotony of the daily routine of merely reading and spelling. We have alluded to this subject in the former part of the report, but even risking a little of repetition, we feel the importance of again calling your attention to it. It may seem to be a very unimportant, as well as an easy task, to teach young children, and one for which it is generally considered most any person is competent; yet all those most conversant with the work of education, who have reflected upon and studied more thoroughly the subject, assert that this is the period which requires as much capacity and preparedness as any subsequent time. At this susceptible period of life, the pupils in these schools need the care of well-educated and kind-hearted teachers, those who are apt to teach, who love little children, and who have been well trained for the work; who have patience, good temper, and forbearance; whose very look and tone and action breathe a sentiment of kindness, together with firmness, and who have a good stock of practical knowledge, good sense and a fund of resources.

To teach a child to spell a few words or read a few lines in the primer twice a day, and this, perhaps, done hastily and sometimes with teasing reprimands, or endeavoring to confine the attention to their books for the purpose of studying, does not constitute, in its true and proper sense, the

art of teaching young children. These active, restless, imitative little creatures require an almost specific method of teaching, combining not only the "best quality of instruction," but the ability to interest them, to awaken their attention and incite them to study, making their tasks attractive, so that their studies and school duties shall be to them a source of pleasure and delight.

School Committee.—P. LE B. STICKNEY, B. V. STEVENSON, SAMUEL ALVORD.

HOLLAND.

The schools of this town are too short. They should be at least eight months, instead of four or six as now. This would require more money it is true. But what of that? Let the money be raised and good teachers be employed. What better investment? The parents of one of our school districts did the right thing in supporting a school during the autumn. We commend this example of well-doing to others in this town. Let other districts follow in the same steps and have a school in the fall of the year.

What in our opinion would be better still,—let the good people of Holland provide a suitable building near the centre of the town, and have a school kept in it three if not six months in the year, for the benefit of all who can attend,—a school in which the common and higher English branches may be taught. Such a school may be self-supporting—i. e., supported by the tuition fees of those who attend. Let it be under the care of the school committee. The whole, or nearly all of the expense to the town would be in the cost of the building. This would be trifling in comparison with the cost of sending the young people of the town away to school, at the present price of board and other incidental expenses.

Provide a suitable building, and the way is open for the young people to have advantages equal or nearly so with other towns. "Where there is a will, there is a way."

School Committee.—ALDEN SOUTHWORTH, H. A. MCFARLAND.

HOLYOKE.

Physical Training.—Although in some of the schools more or less time has been devoted to gymnastics and singing, we think that as a general thing the physical training of the scholars has not received the attention which its importance demands. If the system pursued in our schools is such that the graduates go out into the business of life with enfeebled constitutions, and an incapacity for the endurance of mental and bodily exertion, our schools are very far from accomplishing what may be justly required of them. No brilliancy of scholarship will atone for the lack of

vigorous health. Let no one think that the time spent in physical training involves a corresponding loss in the mental progress of the pupil. Brief but frequent exercises in gymnastics awaken the sluggish, and give grateful relief to the mind when fatigued by study, and fit the pupil to meet the difficulties in his way with renewed energy.

Especial attention should be given to physical training in the lower grades of our schools. It is not an easy task to manage a Primary School successfully, but the teacher who has frequent exercises in gymnastics and in singing, will find it much easier to keep the school quiet and orderly, than one who spends all the time in hearing recitations. If we are trying to educate children it will not do to ignore their natural instincts. Children love freedom of action, but they cannot be allowed to leave their seats; they love noise, but the school-room must be quiet; they love to communicate with their neighbors, but the school-room must not be disturbed by whispering. Now it is not the business of a teacher to eradicate or repress every natural instinct of a child, but to train and develop his faculties in the right direction. Since children love to exercise their lungs, teach them to sing. Nothing adds more to the cheerfulness of a school than a lively song in which all the pupils join. If "things do not seem to go right," (and all teachers will understand the meaning of that expression,) a brief exercise in singing will generally restore good feeling and a cheerful obedience. As children find it a great restraint to sit motionless at their desks an hour and a half, (and nothing but cruelty can compel them to remain so for a long time,) when they become restless they should be allowed to exercise their muscles in a proper way, either by some simple exercise in calisthenics, or by marching in order around the room. Especially should teachers remember that they can easily do one thing for the health of their pupils which is of vital importance,—they can furnish their rooms with a constant supply of fresh air.

School Committee.—OSCAR ELY, A. M. AVERILL, SIMON MILLER, JOHN E. CHASE, HENRY A. CHASE, L. R. EASTMAN, JR.

LONGMEADOW.

Fault-finding.—We do not by any means expect to do away with fault-finding. It is one of the inalienable rights of every American citizen, and especially of the women who are not allowed to vote. But we desire humbly to make two or three suggestions: Lay the largest share of the fault-finding on the shoulders of the school committee. They are used to it or ought to be. Elect a board large enough and stiff enough in backbone and upper lip to bear composedly any amount of censure, and meanwhile cheerfully going on to do the best they can for the general good. They are much abler and better fitted to bear it than are young and sensitive

sitive, perhaps inexperienced teachers. From lack of judgment, or knowledge, or tact, or from impulsive dispositions, or from wearied nerves, they may often make mistakes, and say and do things, or omit to do things, which will give occasion for fault-finding.

But one thing we do insist on strenuously: If you must find fault with your teachers rather than with your committee, do not do it audibly in the presence of your children—for it will probably enhance the very evils you complain of, by nurturing insubordination in the hearts of your children, and by discouraging the teacher, who will be apt to hear in some unfortunate moment of your fault-finding, and her sorely wounded spirit may perhaps unduly exaggerate your real meaning. But if you will not agree to this, if you will not yield your right to speak your mind before the children, let us make this rule and let it be passed in "committee of the whole;" first in "joint committee" of husband and wife, and there ratified by all the adult members of the house, not to make our fault-finding audible before the children until a fortnight before the term closes, and not to do it then until after consulting the committee. By that time we shall usually, by our united counsels, be able to carry the school to a successful close, notwithstanding some actual faults on the teacher's part. If any serious mistakes or deficiencies are noticed by the parents, it is well, first, after listening to reports from their children or others, to go into the school, examine personally for themselves, and secondly, if their minds are not relieved to speak confidentially but frankly with the school committee on the subject, and let him or them communicate with the teacher.

In conclusion, we suggest the following rules as under consideration by your committee for the better regulation of the schools.

1. Every teacher shall be present ten minutes previous to the opening session of the school to see that all things are ready for its commencing punctually and in order.
2. At the appointed time for opening the school, the inside doors shall be locked, and re-opened at the close of the devotional exercises; and all scholars admitted after that time shall be marked tardy.
3. Any pupil who shall absent himself from any examination, due notice of which has been given to the school, without rendering a satisfactory excuse to the teacher, shall forfeit his connection with the school and shall not be re-admitted except by permission of the committee.
4. For flagrant misconduct of any kind, any teacher may suspend a pupil from school, provided that such case of suspension shall be notified immediately or as soon as possible to the parent or guardian, and also reported to the committee; and if ratified by the committee, the pupil thus suspended shall be expelled or re-admitted only by the permission of the committee.

School Committee.—JOHN W. HARDING, GEORGE W. GOULD, HOMER DWIGHT.

MONSON.

A few remarks are offered as to the proper mode of dividing school money among the several districts for the support of the schools.

The money is raised for schools as a town expense, for town school money when raised on the valuation of the town, is a charge for the use of the town. The true theory is, that towns exist to maintain their schools as a common benefit, just as they exist to maintain roads and bridges for the public welfare.

But the principle has long been held, that in the distribution of public money among the several districts, the valuation of the town was to be regarded to a greater or less extent; and so the town was to divide a certain part of the school money according to the valuation. Formerly all the money was thus divided, and so long as the valuations did not greatly differ from each other in valuation, or in the number of schools, as they did not when first established, and for a long time the distribution was fair enough, for it conferred nearly an equal school privileges upon all the children of the town.

But it should be understood, that school districts were never created on the principle of valuation, and they have no claims to special privileges as such on that principle.

The valuation principle ought not to be regarded; for it is contrary to the general school policy of the State, which requires that the cost of public education shall be equalized as far as possible, while the valuation principle tends more and more to inequality, for there is a constantly increasing tendency to inequality in the distribution of wealth.

How, then, shall the school money be divided? In reply to this important question, we say that in the division, regard should be had to two points: one, to the number of schools needed to educate the number of children in the best manner, and the other to the cost of the schools. We deny that one part of the town has a claim to more school than another, because that section pays more to the common fund; but every tax-payer has a right to say how this common fund shall be distributed so as to promote the best good of all the schools in the town. If the town determines to maintain ten schools or twenty-nine schools, then they all have an equal claim on the fund as such, which must be met. They must all have an equal number of teachers. There is no more reason why one school should have an equal number of teachers than that another should have. At least one-half more than half of the common fund annually appropriated for schools should be divided among the schools equally. If the town think it better to continue the small schools on the present system, they must have

amount of money, simply on the ground of being legally constituted schools, without any regard to their size. But all the money ought not to be thus distributed, for as we have seen, the disparity in the schools is very great.

It is evident that a school with an average attendance of six and one-half pupils, ought not to have as large a share of the public money as a school which has an average attendance of forty-eight and one-half, which is the measure of the present disparity. Some difference ought to be made in the appropriations on account of this disparity, and we think every tax-payer has a right to say that the policy of the schools in this town shall be such, that the disparity in the schools shall be made less, and the advantages of all the scholars in all the schools shall be made as near equal as possible; and when the schools have been made as nearly equal as they can be consistent with the best good of all the pupils in the town, then, we think each school should have nearly the same amount, in the distribution of the public money.

It should be understood by all who contribute to the support of the Public Schools, that a school cannot be a good one, so as to answer its public uses, if it be very small or very large. A small school cannot be a good one, even with a large appropriation, for minds are wanted as well as money to make a good school.

It may be possible to raise cabbages and onions on our most barren sand-hills, if money enough is used to supply moisture and manure; but money will not make a school without scholars, and the quality of a school, up to a certain limit, is dependent on the number as well as the capacity of the pupils. Hence the reason for uniting small districts, so as to increase the size of the schools.

But a school may be too large as well as too small. A large school requires different arrangements, and some qualities in a teacher which may not be so necessary in a small one.

The teacher of a small school ought to be as good an instructor as of a large school, for the small schools may have as good minds to be trained as the large ones have; and in general, schools of farming districts have a higher rank of scholarship than village or city schools of the same grade have. But a large school requires a teacher with more power of control, and this prime quality makes the difference in the price of instruction.

We regard the schools of the town as by far its greatest public interest. We have reason to believe, that by too many they are valued as of very little importance; certain it is that this, the highest end of our existence as a town, will not be secured until a greater degree of interest is felt in the improvement so much needed, in order to make the schools worth their present cost.

Our farmers are careful to provide comfortable shelter for their stock in the winter, and good pasturage in the summer. They will not neglect their sheep when the feed is short and the springs are low, to drive their sheep at night and morning an extra half-mile or a mile even, if thereby they can reach green pastures and drink at pure fountains. If they are careless of their sheep, they are careless of their children. Is a man better than a sheep? How much more careful should a father be for his children than his lambs? The end of his labor is for his children, and their physical wants he will not neglect. If his mind is worth more than the body, the character is better than the body.

A farmer cannot be considered as respectable if he is not able to furnish his children three meals of good food every day in the year. In the minds of the children in the Public Schools, the town provides food for one hundred and fifteen days, and they must fast and famish one hundred and eighty-three days. The cattle know the difference between English hay and bog meadow. The children of our schools have a relish for what accords with their intellectual appetites.

A farmer has an open eye to see the improvements and the progress of the modern barn or pig-sty. Shall he have no concern that the school in which the immortal minds of his children are trained, shall be unworthy of the business done in it?

School Committee.—CHARLES HAMMOND, HENRY A. WARD, JOHN P. CADY.

SPRINGFIELD.

Corporal Punishments.—Nothing is of more importance in making a school successful than the firm and uniform maintenance of order, and the proper subordination of the pupils. In ordinary cases, order may be attained by mild and gentle means, through the influence of mutual affection and kindness. And such means are to be preferred. The teacher should aim to win the love and esteem of his pupils, and secure in his little community a public sentiment in favor of order, always ready to sustain him in his measures of discipline in the case of the disorderly. But a resort to measures of severity sometimes becomes absolutely necessary; and though corporal punishment should be resorted to only when other means have been persistently tried and have failed, when in the deliberate judgment of the teacher it is deemed necessary, there should be no shrinking from the duty, however painful it may be. And when the punishment is properly administered from right motives, and for a good end, it is fully recognized by the law of the land, and by a higher law, as a legitimate and justifiable mode of discipline. The teacher being for the time *in loco parentis*, and having in this respect the same powers and responsibilities as parents. Courts of justice are

to sustain teachers in the exercise of a proper discipline, even when the punishment is unusually severe, if it was obviously necessary in order to maintain their supremacy in the school. And they never will hold them liable, criminally, for mere errors of judgment, if the motive and purpose be right, no more than a parent would be so holden. Yet if in such case, through gross carelessness on the part of a teacher, a serious and lasting injury should be inflicted upon a pupil, the teacher might be made to respond in damages for the same in a civil suit. For this and other obvious reasons, great caution should be observed by teachers in administering such punishments.

The principles unfolded above involve the controlling rule which characterizes the present management of our schools. For several years past there has been a gradually increasing tendency on the part of teachers to govern simply by the law of love, and the committee have most cordially encouraged this tendency. The result is that instances of a resort to the severer modes of discipline are comparatively rare. In the schools of the higher grades, corporal punishments, for the most part, have been practically discontinued; and in the lower grades they are much less frequently applied than they were in former times. Yet, in our opinion, the right and the power so to punish should still be vested in the teachers, to be exercised when they deem it absolutely necessary for the good discipline of their schools, subject to the control and direction of the committee. Then the mere consciousness on the part of the teacher that he is possessed of this power and is therefore strengthened in his position, and the knowledge on the part of the pupils that it is so possessed and may be exercised, will in a large proportion of cases answer every purpose without the actual application of it. An abuse of this power seldom occurs in our schools, as our own observation and experience testify; much less frequently we believe than in the family discipline to which the pupils are subject at home. And there is abundant testimony of the efficacy of this discipline in effecting a reform in cases where nothing else would do it. By it, inveterate and stubborn offenders have sometimes been reclaimed, when all other means have failed.

It is sometimes urged that exclusion from school of disorderly pupils may be adopted as a substitute for corporal punishment. This may be in many cases, as before intimated, the most judicious and expedient course in reference to the more mature classes of pupils, especially those of the female sex; but the general application of such a rule would not be practicable in the Intermediate and Primary Schools. Teachers can suspend, but the committee alone have the authority to exclude from school. Adopt therefore the proposed substitute, and the most common cases of discipline must be examined and decided by the committee; and what a mass of vexatious and burdensome duties would thus be thrown upon them

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the superintendent!—and how much respect would remain in the person and authority of the teacher after the government of the school is virtually wrested from him and transferred to the committee? But more than this: we believe the substitute proposed cannot be adopted as a general rule—that, so long as this mode of discipline is authorized by the law and sanctioned by the civil courts as legal and proper in the schools, it is questionable at least whether a committee would be justified (under the law authorizing exclusion from school for good and bad conduct) in resorting to this extreme measure of depriving children of the privilege of education, until, as the only remaining means and hope of reforming him in the school, this by corporal punishment has also first been proved a failure.

If, therefore, this mode of discipline by corporal punishment is hereafter universally discontinued in our schools, let it be done by the force of law by a prohibitory statute, so that the practice and the respect may be according to law and uniformly the same throughout the Commonwealth.

Other substitutes are sometimes adopted, which are vastly more mischievous in their effects than any of the ordinary corporal chastisements that are inflicted. Of these, are morose and repulsive looks and countenances—habitual petulance and scolding, continued day after day—the holding up before the school pupils as objects of ridicule and derision—all which modes of discipline, by frequent repetition, defeat their own purpose, while their tendency is to inflict a lasting injury upon the character and tempers of the children, with a corresponding reaction upon the teachers themselves.

While we have thus attempted to vindicate the use of corporal punishment in cases of absolute necessity, we have also at the same time proposed what we consider a “more excellent way”—always to be resorted to when there is a reasonable hope that it will secure the end in view.

The New Provision for Truants, etc.—The alarming increase of truancy and depravity in our city has awakened serious apprehensions as to the consequences, and led to energetic efforts to check this growing evil. The new arrangement initiated for this purpose contemplates, in the first place, the reformation of truants and other vicious, idle and vagabond children; and, in the next place, the bringing back to a better state of mind and morals actually belonging to the schools, but attending very irregularly, on account of detention by their parents at home or otherwise. For this class, a place has been provided by the city government for their reception, confinement and instruction (at the city almshouse,) under the supervision of a kind and efficient female teacher. To this place they are sent by the justice court for truancy or other misdemeanors, where they are kept

ing the period of their sentence, or until the court, being satisfied of their reformation, discharges them. This is the Truant School.

For the latter class (irregular pupils) a special school is assigned, denominated the Ungraded School, (kept in the State Street school-house, under the charge of Mr. Barrett with an assistant)—in which the pupils are suitably taught as in the other schools; and whenever any of them become uniformly constant in their attendance and commendable in their behavior, they are allowed to return to the graded school where they properly belong; but if their irregular attendance degenerates into truancy, &c., then they are sent to the Truant School and place of confinement at the almshouse.

Under the operation of this system, the motives of hope and fear are brought to bear on both classes of children, and in connection with good instructions and kind treatment, cheering indications are seen in most cases of a genuine reformation.

But outside of these schools the new arrangement is exerting a most salutary influence in promoting a more regular attendance in all our schools, and greatly diminishing the class of vagrant children in our streets.

There are some points of importance relating to the system of instruction and the manner of conducting it in our schools, to which we wish briefly to advert, with a view to the inquiry, whether some improvement may not be made in respect to them.

1. Is there sufficient effort always made to explain to children the reasons of what they learn—the “whys and the wherefores?” For instance, a pupil may perform on his slate or on the blackboard, day after day, some of the most difficult problems in arithmetic, following implicitly the rule in the book, and yet have no idea of the reasons of what he has done—not even of the simple process of subtraction—much less of the more complicated processes in fractions, and the higher branches of arithmetic. In grammar, geography and history, also, the same practice of learning by rote, as it is called, too often occurs, and needs to be cautiously guarded against by the teacher.

2. Is the habit of making a practical application of what is learned to the business of life so constant and universal among teachers as it should be—or, in other words, is there always sufficient pains taken to show clearly to the pupil how the knowledge he is acquiring at school can be made directly available to him in daily life—in the pursuits in which he may be called to engage? Illustrations on this point will readily occur to every intelligent teacher.

3. Do the natural sciences, chemistry, natural philosophy, geology, natural history, &c., receive as much attention as their importance demands? A fresh interest has recently been awakened in these pursuits by a revival

of them in the High School, and by the establishment here of a Scientific Association, which is rendering good service in this way by its discussions, lectures and exploring excursions, and promises to be a most efficient and valuable auxiliary to the schools. And this new institution is hoped, may be the means of introducing more generally into our schools these studies, either by regularly organized classes or by miscellaneous general exercises. Many of our youth who are educated in our Public Schools complete their course at the Grammar School. Is it not to be regretted that before going from the school to the business of life, they should not know something of those general principles of chemistry, philosophy, &c., which explain the common phenomena of nature, and lie at the foundation of the mechanic arts.

4. Would it not be an advantage of much importance in our schools for the teachers more generally and fully to instruct their pupils on subjects relating to civil polity—embracing particularly the nature of our government, its departments, national and state,—the peculiar organization of each,—the several departments and mutual relations? In our view, it is as far as it is practicable, that these topics should be made the regular study and recitation, especially among the older and more advanced classes of pupils; but when this is not feasible, an earnest teacher will contrive to find occasions when, in the form of oral lectures, and miscellaneous exercises and discussions, much information may be conveyed by the pupils on those subjects, which will be of inestimable value.

A beginning may be made in these studies at a very early age, from the first school attendance; when, in a familiar way, by simple oral exercises, the pupils may be made clearly to understand all about the divisions of the State, cities, counties, states and countries—their appropriate objects and relations to each other—the various institutions, officers, &c., connected with them, and other like matters of interest suggested by the study. In this way the pupil, as he advances from grade to grade in his studies, will be accumulating a store of local information which of itself will be of much practical value to him, and besides will be likely to inspire a desire for higher attainments of knowledge in the same direction. Moreover, such occasional exercises, like object-teaching, have a happy influence in giving fresh vigor and animation to the pupils in their daily and regular studies and duties of the school. In contrast with this it is surprising to see how much ignorance is sometimes betrayed by our youth on these simple matters, merely because their attention has not been specially directed to them.

Inasmuch as under a republican government the primary object of education at the Public School should be to make our youth intelligent freemen, qualified in every respect to discharge the duties of good

it would seem that nothing could be more appropriate for this purpose than the instructions suggested above.

5. In the instructions and discipline of the Public Schools, besides the acquisition of knowledge and the culture of the intellect, another object of commanding interest and importance—as prescribed by the constitution and the laws of the Commonwealth—is the formation of individual character, comprising all those virtues, habits and principles which will make the pupils worthy and useful members of the community. Is this object always kept in view in the school-room as much as it should be? Would not some increase of attention and effort in this direction be an improvement worth attempting, where there has been a deficiency in this respect heretofore?

Chairman.—JOSIAH HOOKER.

Truancy, Absenteeism, etc.—Especial efforts have been made the latter part of the year to prevent truancy and absenteeism, and also to bring into the schools, and so under better influences, a class of boys that were not enrolled upon our school lists. Those acquainted with the city have known that there were many of this last class, boys growing up in ignorance and idleness and crime; and the teachers have felt that irregular attendance was their greatest obstacle. So long as the boys picked up by the truant officers could say with truth that there was not room for them in the schools, and with a look of “injured innocence” assert that they would be glad to be in school, and so long as there was no penalty for truancy and unnecessary absence save what the teacher could impose, little could be accomplished. But at the beginning of the present school-year the opportunity was afforded of carrying into effect the plan recommended by his honor the mayor in his address of last year and in the school committee’s report. That plan was briefly this: that the teachers should use all the means in their power to prevent truancy and secure constant attendance in their respective schools; that for such as they could not control, and such as were not found in the schools at all, a school should be established and placed under peculiar regulations; that those who could not be reclaimed at this point should be brought before the police court and be sentenced to a place of confinement and instruction. Up to this time there had been no room for this peculiar school, but by the transfer of pupils from State to Elm Street, a room in the State Street school-house could be used for that purpose. There the ungraded school was established, designed for those who from any cause could not or would not be constant in their attendance in the graded schools. This school was placed in charge of Mr. R. C. Barrett, who had added to the experience of many years as a teacher, a term of more than three years in the service of his country. When later Mr. Barrett was made a truant officer that he

might look after those who were absent from his own school, and were despaired of by the other teachers, and it became necessary that he should be out of his room much of his time, Miss Electa Miller, twenty years had been a successful teacher in the schools of the city, and was engaged as an assistant, and she is doing a very important part in the best manner. The school commenced with three pupils, but the number was soon increased. Several boys who were not in any other school, and had not been for several terms, voluntarily offered themselves to the ungraded school. Those who best knew the boys had little doubt of the success of the school. It was not supposed that the boys could be kept there unless there was something beyond that they should stand for. But for this the city government had made provision. Under the direction of a portion of the house at the poor farm had been fitted up for the keeping and convenience of those who might be sent there. It was prepared for eating, sleeping and study, remote from the inmates of the house, and prepared, and in a few weeks several were sent there by the justice of the peace for a term of six months, and from time to time more have been sent till the present number is fifteen. Fortunately for the success of the experiment, a lady, Miss Bascom, was engaged as matron, whose long experience as a teacher, and whose warm, kind heart, admirably fitted her for the place. Under her guiding hand the progress in study has been great, but the change for the better in respect has been wonderful. This is so apparent that all who have seen the school, so far as I know, have been struck with it, and those who at first had their misgivings have become thorough converts and earnest defenders of it.

It is very desirable for the sake of the boys that there should be some manual labor for them. It would be an important part of their education, and help pay expenses, and if it came within your province, gentlemen, to provide it, I should strongly recommend it, and I will express my hope that those within whose province it does come, will if possible make provision for it.

The ungraded school is doing a good work for those children. The circumstances seem to compel irregular attendance. Some parents are so poor that they feel that they must have the services of their children when they can find work. Some find employment regularly one day in a week, and it is evident that a boy out of school one-fifth of the time cannot keep up with his class with profit to himself or without injury to others. Pupils are sent to this school, not as a disgrace or a punishment, but because we can thus meet the necessities of the parent and still do something for the education of the child. Others are indifferent to the attendance of their children. They do not rightly appreciate the harm a child sustains by his absence, or the injury he inflicts upon others.

the absences of such a pupil are frequent, he becomes a candidate for the ungraded school, and understands that unless he can be more constant he will lose his place in the graded schools.

In the efforts put forth to secure constant attendance some have felt that the inalienable rights of parents were not sufficiently regarded. It is not, I believe, claimed that the custody of the child is taken from the parent, but it is claimed that the custody of the schools is in the hands of the committee; that the schools are of the nature of a trust placed in their hands as a board of trust, and that they are under obligation to take that course which seems to promise the greatest good to the greatest number. Our laws do not compel a parent to educate his child in a Public School, but to educate him somewhere. The State puts in her claim for an educated citizen, and will have that claim allowed. The parent may elect between an education acquired at home, at a Private School or a Public School, but not between education and ignorance. If he ever chooses to have his child educated at the public expense, to avail himself of the privilege offered to all, he is under obligation so to do that as not to interfere with the rights of others. Necessary absences will be borne with longer than unnecessary ones, just as a merchant or manufacturer will bear longer with the necessary absences of a clerk or an operative than with the unnecessary, but there is a point beyond which even necessity cannot save from unpleasant results.

The schools this year are remarkably full. The whole number of persons between the ages of five and fifteen years, as returned to the board of assessors, May 1, 1866, was 3,846, and the number in the Public Schools the present term is 3,343, or nearly eighty-seven per cent. It is not always easy to trace results back to causes, but it seems to me that two things have contributed greatly to the present condition. The increased and improved school accommodations have brought in some who from choice or necessity were in Private Schools, and the arrangements for truants and absentees, many from the streets. The invariable testimony of the teachers has been that the effect of the Ungraded School in State street, and the Reform School at the poor farm has been excellent upon their schools.

Evening School.—This school was opened for the winter in the State Street school-house, as the town hall where it had been held for several winters was used for other purposes. It is under the charge of B. Maynard, who has taught in the city for the last two winters and was assistant in the Evening School two years ago. He has two assistants and about one hundred and twenty-five pupils, and the school is doing well. It was intended to exclude those under fifteen years of age who ought to be in the day school, but many such presented themselves, and when referred to me told pitiful stories of orphanage and poverty. Some girls thirteen or four-

teen years of age were out to service in families ; some work in shops and factories ; and all claimed that it was impossible to attend school. At my request one of the truant officers followed up to ascertain the facts and found that in most instances the statement was too true. The point was yielded and they were were allowed to stay out of school. But poverty keeps those children from our schools. The law of Massachusetts intend that any child shall, because of poverty, be deprived of a fair Common School education ? On the contrary, we do not intend that in spite of such poverty he shall have such an education. True, poverty may exempt the parent from the fine of five dollars for keeping his child from school, but does it exempt the city from its obligation ? Indeed, does not the city's obligation to render help begin at the point where poverty removes from the parent the liability to fine ? If we think that high taxes are the greatest possible moral evil, will the removal of poverty and crime five years hence be lighter and more easily borne than the tax on poverty now ? If because a child after a hard day's work spend two hours in an evening school the cupidity of the parent induces him to such service, or if when poverty renders that labor necessary the public conscience is satisfied with the meagre advantages thereby secured, in a word, the evening school is made the excuse for keeping out of day schools those who ought to be in them, then we may at least say it is not an unmixed good.

Superintendent of Schools.—E. A. HUBBARD.

WESTFIELD.

In the month of June, 1866, in common with our fellow-citizens we were called to mourn the sudden decease of Rev. Dr. Davis, a pious and plenary Christian, devoted pastor and pure philanthropist. In every undertaking that promised blessing and usefulness to mankind, of popular education, next to religion, received his choicest and his most earnest effort. Whether College or Primary School service, it was always cheerfully given. For about forty years he was connected with the educational interests of the town, and for many years was an efficient member of its school committee. His counsel was always deemed valuable, and treated with respect. For a number of years he possessed a mind remarkably fresh and progressive. At the time of his death he was chairman of the committee, a relation which he sustained, with slight interruptions, for several years. We deem it fitting and proper that in some public manner we, together with the scholars under our charge, should join in paying a tribute of respect to the memory of so devoted a friend and good man, and therefore passed the following orders :—

"It having pleased Divine Providence to remove from our midst by sudden death, the Rev. Emerson Davis, D. D., the esteemed chairman of this committee, therefore—

" *Ordered*, That as a mark of our regard and esteem for the character of the deceased, his many and exalted virtues, and his long and efficient services in the educational interests of the town, the Public Schools be closed during the day on Monday next.

" *Ordered*, That the school teachers be invited to meet us at 1 1-2 o'clock P. M., on Monday, at the High School room, to attend the funeral services of the deceased, at the First Congregational Church."

The committee and teachers joined a large concourse of citizens of our own and other towns in escorting the remains to their final resting-place in the grave.

Green District Schools.—The schools in Green District will sustain the same relation to the Normal School for the year to come as they have the past year. The method of teaching will be strictly normal or "object." The public as well as the pupils of the Normal School may here see the principles of teaching inculcated by that school reduced to practice. Aside from this and a voice in the selection of teachers, these schools will be under the supervision of the committee as are the other schools.

The committee assented to this arrangement a year ago with cheering hope that the schools would be benefited by such relation, and we are happy to say, after the year's experience, that our expectations have been fully met. We believe the relation advantageous to both the Normal School and our own, as well as the cause of education generally. The practical test here applied to the method of teaching inculcated by the Normal School, must convince the most skeptical, as it seems to us, that the method is vastly superior to any of the past. The Normal Schools of the State are rendering invaluable service to the cause of popular education by breaking up the old ruts of school teaching, and showing the public a better way to "teach the young idea how to shoot."

Object Teaching.—The first knowledge the child gains, is of objects in the external world. There is but one way by which this knowledge can be gained. The objects must be literally presented to the senses before it is possible for the child to have ideas and thoughts of them.

That teaching which consists in presenting to the mind the objects of its knowledge is called "Object Teaching."

The principles upon which object teaching depends are found in the nature and wants of the human mind. Words are not the original sources of our ideas. They have no power to excite for the first time in the mind, ideas of which they are only the signs. The teacher makes a fatal mistake in his work who attempts to excite in the mind of his young pupil a knowledge of things abstract, or who attempts to excite any knowledge

at all, primarily, by committing to memory mere words. It is common in our schools to hear young pupils reciting descriptions of objects which they have never had the most remote notion of. The object teacher actually puts into the hands of his pupils the objects themselves. After ideas have been gained, names are given to them. In this way things are always taught and studied first, then the names of things.

The committee encourage this kind of teaching and some of our teachers are practising it with most gratifying success. We think that the teachers of our schools have no superiors in so far as methods and means of study are concerned.

School Committee.—THOMAS KNEEL, JOHN JENNINGS, J. H. WATERMAN, JAMES HORTON.

FRANKLIN COUNTY.

CONWAY.

We hope and believe our citizens will sustain permanent support for the School, after the successful experiment now made. If our citizens desire it, and believe such a school will increase the property, as well as be a benefit in other ways, will not they be benefited?

Our pupils need not be sent out of town to be educated. They can have the best of School studies. But without a good school at home, they will never grow up in comparative ignorance. How much better knowledge which can be acquired at home should be, than the knowledge which can be acquired at a distant boarding-school. In this, we have not, like many towns, to begin by erecting new buildings. We have plenty of pupils from all parts of the town, as experienced by the success of our school, anxious to improve such privileges. Many of our boys and girls, who attend this school, will grow up with but a very imperfect education. This school will stimulate all to desire greater attainments than have been made in our District Schools. And it will have a tendency to raise the standard in these.

With such a school, we may hope that many a bright boy and girl will lay the foundation for a life of usefulness and honor, where such aspirations might not be sufficiently encouraged.

The graduates of our High Schools are not the ones to desire no more knowledge. Some of them will go to our colleges and female seminaries. Others will be all the better prepared to fill honorably stations of usefulness. They will make intelligent farmers and mechanics and citizens. And we shall be raising up and qualifying our own teachers,—a thing which much needs our attention, if we are to have even our Primary scholars well instructed. A few years will conclusively demonstrate the many advantages of such a school.

School Committee.—E. CUTLER, R. A. COFFIN, D. T. VINING.

DEERFIELD.

We know indeed that a mind which is cultivated by study and enriched with various knowledge, is so far forth a power in itself; and if properly directed is a mighty advantage to its possessor, as also a benefit to others. It is therefore a laudable ambition which every parent may cherish, that his children should have the best educational advantages possible. Because they are his children it is proper that he should desire this. But we have a common interest in the matter. The public good, public intelligence, morality, enterprise, prosperity,—all require that the benefits of our educational system be made as great in themselves, and be as generally diffused as is possible. Education, it is true, cannot do everything for a people, but in its place it is essential to their well-being. And so this is a matter which does not pertain to neighborhoods or towns as such, but to the whole people. All are interested. It will inure to our benefit and to our children's, if even greater educational privileges than we enjoy could be given to all the children and youth throughout our wide land.

We can hardly imagine now how much, for all our high privileges as a people, we are indebted to our Public School system. Years ago it was said of it by one high in official station,—“It has become the basis of American government, industry and civilization, and the efficient supporter of good morals and Christianity.” Within a twelvemonth, a celebrated European writer and educator, while travelling among our people, among other intelligent and striking observations on what had impressed him, gave this testimony,—“I have seen how much you owe to education. * * * I am ready to testify that in New England and in other parts, including the West, you have been able to raise the working classes to a state of physical comfort and intelligence such as has not been realized in any country in Europe. You owe this to the word of God, to your quiet Sabbaths, and to education.” Shall we not then as a people hold our educational interests in high esteem? Shall we not willingly bear our share of the burden they impose? The public outlay may seem large, especially

to such as think themselves not personally interested ; but all directly or indirectly ; and the returns in this case are more beneficent than in almost any other.

Notwithstanding much that has been said to the contrary, drill in school, if only it is conducted in such a way as to ne scholars to exercise their own powers of mind. We say then every wise method, keep their minds awake, teach them to b and to reach after a perfect understanding of their lessons. they do not fail to reach this ; bring it down to their comp far as may be necessary ; and never leave it till they do Better spend a week or a month even on a lesson, rather than in that superficial slipshod manner which is too often witness motto be, "Not how much, but how well!" The teacher's done until the lesson is not only recited, but comprehended, u by the scholar. Our best schools,—schools where there h most improvement, the most order and interest among the those in which the instruction has been most elementary. are the best teachers who, with love for their work and ear adapt themselves to this method. We have had some such past year.

School Committee.—R. CRAWFORD, J. M. EATON, T. PACKARD.

GILL.

No candidate should ever apply for a school who does vocation of the instructor. The eminent men in all professions who have a natural inclination and love for their work ; and who pursue some particular work in life as a sinecure,—a way of procuring a livelihood. The clergyman who enters desk with other motive than a love for the saving of the soul low-men, has evidently mistaken his calling ; and although h may be polished and rhetorically correct, the real good he e invisible. The physician who makes what Pope calls "the p of mankind," physically, his constant study, and loves it bet other pursuit, is the one to be trusted with the care of the s one whose ride will become extended far and near. The la such by a natural love for jurisprudence and inclination to th is the one who will never have to wait for clients, and th counsel will be sought and followed. So with the school tea an experience of some score of years in the examination o and their several schools, the truth of the foregoing reme forcibly impressed upon our minds : and the first question s

employing agents of candidates for instructing should be, "Do you love to keep school?"

In a former report, your committee touched upon the subject of fires in our school-rooms. We would again call the attention of prudential committees to the same matter. In some of our school-houses on some of the coldest days of the season, we have noticed windows and doors open on account of the unbearable and suffocating heat within. It does seem that a little more care on the part of the school-teacher might serve to regulate the fires, and keep a more equitable temperature in the rooms. The fire is suffered to get low and the children begin to feel cold. Some one complains; and the teacher orders some boy to replenish the fire. He crams the huge stove full of wood, and in a short time it becomes too hot by far. Then the windows are raised and the perspiring ones, nearest thereto, feel the icy air of out-doors pouring in upon them with chilling effect. Soon seats in the school-room become vacant. This scholar has a bad cold, that a fever,—they are sick. The want of proper care in this matter of fires is also one which we would commend to the citizens of each district, for their consideration; as fuel, which has latterly become an important item of expense, may be saved; and the health of our scholars which is of far greater consequence, may better be preserved.

School Committee.—JOSIAH D. CANNING, LEONARD BARTON, J. S. PURPLE.

LEYDEN.

The employment of good teachers to teach several successive terms in one district, we deem of very great importance. As is the practice at present, one seldom teaches more than three or four months, and then a new one takes his or her place; thus it is one continual change. Now as long as this is the practice, we can expect to make but slow progress, for the first three or four weeks of every term is thrown away; that is, it takes one-fourth of each term to become acquainted; the scholars with the teacher, his method of teaching, his rules and regulations; the teacher with the scholars,—their various dispositions and capacities for learning; also his most proper and advantageous manner of conducting the school. Then we say, when success has attended the efforts of a teacher in a certain school, before the term expires secure the services of that teacher for the following term, and rid our schools of this great evil.

School Committee.—C. W. SEVERANCE, J. BUDDINGTON, Jr.

MONTAGUE.

Science, art, machinery, literature have made some marvellous and magnificent strides within the last twenty years. Everything that has maintained a prominence and influence has kept pace with steam and lightning.

Can we say this of our Common Schools? Or have they degenerated with the ancient gait of the lumbering stage-coach of a forgotten age? If, as we fear, they are little if any better than they were years ago, how soon must they cease to be a leading motive of our society?

Now we believe the fundamental fault with our schools is that the system has not changed with the times,—that we have not, as the people of the town, subjected the system to modern plans, that we have uprooted “barren fig trees,” that we adhere to old customs too long, and are too ignorant or jealous of our new forms and directions. If the system is old-fogyish, erroneous, unfruitful, citizens and teachers are culpable.

Parents have tolerated a delinquency on the part of their children which has disfigured the registers with countless disgraceful tardy marks; they have condemned teachers with the hearing of one case only; they have persisted in their old sin of neglect. Farmers who will climb the most precipitous hill, leap the most chasms, of an oppressive summer day, to see their cattle “off to market,” to know how they are putting on muscle and filling with fat, send their boys and girls to schools where bones become brittle, and muscles are distorted by improper seats and neglect of exercise, and their brains turned topsy-turvy by misdirected efforts;—they should inquire what kind of a market they are fitting for, and what they will bring.

The committee has approbated some teachers dolefully with an old delusive apology (sometimes) that such a teacher is not any scholar that will go to that school; as though a blank and ignorant candidate did not show by his ignorance that either he lacks intellectual capacity, or that he had directed his attention to other matters besides education, and to other places than the school.

In some of the cases the committee may, with more truthfulness, confess to cowardice in approbating such teachers. Though unquestionably a fact that no other petty office in the gift of a school, faithfully fulfilled, will reward a man with so many enemies, the interest should be subordinate to the interest of the school, and the candidate sensibilities of an unqualified candidate who has the privilege to appear for examination, should not alone be rewarded with approbation. The tender hearts of the candidate’s loving parents should not mine his acceptance or rejection.

One very prominent error in our school system, for which the parents, and committees are responsible, is that we pay our teachers sparingly. We may pay enough for such as the market asks, but by establishing a price commensurate with the

responsibilities, a different class would come into the market. Let a person spend hundreds and thousands of money and years of time to fit for a teacher, and we offer him little if any more wages than we pay a verdant "Son of Erin," rank with the scent of old Ireland, a grovelling graduate from the peat-bogs of the Emerald Isle. A man or woman of natural capacity, and sufficiently educated to teach school, of ripe experience and mature years, can command double the pay in any other business; hence, though he or she has an aptitude and taste for the profession, they abandon it for lack of compensation. Why, a mechanic who spends a year or two at a trade, and under pay all that time, commands double the wages he did twenty years ago. Are we ready to permit the wages of the school teacher to rate so low that only puerile boys and immature girls will stoop to the work?

Chairman.—SEYMOUR ROCKWELL.

NEW SALEM.

We believe in courtesy of manners being encouraged in children. It may be unpopular with some, but we confess that we strongly sympathize with former customs. There was a quiet dignity and graceful courtesy which marked the habits of the old men and women of whom there has come to us and still remain a few relics at this day. Those manners were early taught. It is a beautiful sight to behold a child who understands his position, who speaks and acts respectfully towards his superiors. Every one likes pleasant words and a gentle demeanor. Let the child learn at home, from example as well as precept, and the teacher co-operating, the influence will be salutary. Sometimes, however, it will do to spice an argument to make it tell. It is said, "that a schoolmaster should be modelled after the old centurion, whose words had such persuasive power: 'to one he says, go, and he goeth; and to another, come, and he cometh; and to a third, do this, and he doeth it.'"

There must be earnest and persevering study to obtain a respectable amount of knowledge, and it is a work which always pays. The books of science cannot be so simplified as to preclude toil. The young can and should be aided to help themselves, and do what they can towards making their own way onward and upward. These simplifications of science remind us of the Scotch laird, who earnestly recommended his tenant to try some new compost for his land. "Why, Donald, ye can carry enough for an acre in your breeches pocket." "Very like, very like, my friend," replied the shrewd Scot, "but then, ye could carry the crop in your waistcoat pocket."

School Committee.—D. EASTMAN, B. W. FAY, J. A. SHAW.

BOARD OF EDUCATION.

NORTHFIELD.

To make such a system effective, and as a most necessary adjunct to the surroundings and appliances of the school-house and school, we conceive, should be in consistency with the general ideas existing about the school-house,—even the very approach to it should be pleasant and inviting, and nothing that is unsightly or offensive to the sense of propriety, should be allowed. Everything ought to be conducive to the formation of good taste and good manners, and not a shabby and battered character inside or about the house be allowed to remain as a perpetual temptation to acts of vandalism. Mr. Beecher says, "before you can make of the heathen African a Christian, you must wash him out of the dirt and put a shirt on him;" so before you can enter with the spirit of a true man and a student, you must find the place fit for the occupancy of a student and a man.

The want of proper ventilation is a very serious source of evil. There is no doubt that much of the difficulty and dullness in the schools has its origin in the restlessness, inability and physical prostration of the teachers and scholars from this cause. How is it possible for either teachers or scholars to apply themselves to their duties with any earnestness or enthusiasm, when the lungs labor for a suitable supply of oxygen, and every nerve is unstrung in consequence of breathing a vitiated atmosphere? Let us then cease to practise a false economy in this matter, and by a generous effort put our school edifices in such condition that we should be proud to exhibit them as pleasant, attractive and healthful places, so that we may invite our friends and all interested in the education of the young, to witness the workings of the school, without being ashamed of the exterior appearance or that of its interior, knowing that it is comfortable, useful, and in order; that we have a chair to offer that is sound and useful; and a plenty of them; that our blackboard accommodations are ample, and that our needful conveniences and comforts are in full supply.

Your superintending committee, under the system at present in vogue in this town in the management of schools, have nothing whatever to say in the selection of teachers, and cannot therefore be held responsible for the well-being of the schools in that particular.

It is true, every teacher is required to be brought before the board of education for examination in the Common School branches, and before entering a school to obtain a certificate of qualification, which is customarily given if the candidate evinces a respectable degree of proficiency in said branches of education. All this seems simple enough perhaps well enough from a superficial point of view; but we do not appreciate the many difficult and delicate points that may, and frequently do arise in appraising a teacher under the circumstances.

illustrate with an example: The prudential committee engages his teacher, and comes with her for examination,—it may be Saturday afternoon preceding the Monday appointed for opening the school,—perhaps not until Monday morning; the scholars are all in readiness, the parents expecting the prompt commencement of the term. The “prudential,” after many disappointments, has at last succeeded in obtaining a candidate, and is naturally anxious for her success; the candidate herself, hurried, nervously excited, and dreading, as is almost always the case, the severity of the committee in his examination, is by no means in that calm state of mind which is desirable. It will be at once seen that the examining committee is not placed in the best position to enable him to reach a clear and discriminating judgment of the teacher, who is very likely to be an entire stranger, and of whose qualifications little is or can be known save the fact that she shows a fair acquaintance with text-books and certain general principles, after perhaps making charitable allowance for the natural embarrassments of the occasion.

To withhold a certificate under such circumstances, would result in great pain and mortification to the individual, disappointment in the district, and would place the prudential committee in a position doubly embarrassing. A regard for such a state of things, and others not dissimilar, must often influence committees to give a certificate, unless the applicant is too palpably unfitted for the school to admit of question.

Again, the experience of all committees who have served a few years, has frequently made it apparent that the same success does not follow a teacher in different districts in the same town. The prominent features in her methods and manner which lead to success in one school, may prove a source of partial failure in another. Years of practice only enable a teacher to acquire that peculiar power of adaptativeness which secures for her success with all classes of pupils, and under every variety of impinging circumstances and outside influences.

Two schools laboring through a term, threatened perhaps with failure, certainly far removed from a satisfactory condition, might, perhaps, have assumed an entirely different character, and have both succeeded to the satisfaction of parents, pupils and committees, had the teachers simply changed places. It is often that teachers present themselves for examination, who would succeed much better in some other school than the one for which they are engaged; but your committee have no power to transfer them. If the duty of selecting and contracting with teachers was left (as your chairman contends for many reasons it ought to be) with the general committee, all applicants might be examined in the first place, and each one approved, assigned the school that in the judgment of the committee she is best qualified to teach.

The change in prudential committees which takes place every year is most sure to bring about a corresponding change in teachers. At whether the individual is a good teacher or the reverse of a good teacher, the year rolls around the place that knew her knows her no more. Scholars, who have fairly worked into her system of government, and have obtained a start with excellent promise, must begin again as it were, and spend half the term in learning how the new teacher wants them to learn, and then, when a little way, repeat and re-repeat the process.

This change of teachers, my friends, is an enormous evil. It is fully admitted by all who have practically observed the working of our most distinguished and practised educators to commit a few years' experience, as a prolific source of the most serious disorder, undermining the usefulness of our schools. "It introduces confusion, weakness, discouragement, and often retrogression, in the place of economy, efficiency, and progress."

Superintendent.—JOSEPH B. CALLENDAR.

ORANGE.

A few graduates from our Normal Schools have been employed every year, who have invariably, by their promptness and clear understanding of their duties, exhibited a superiority to those teachers not so employed. This fact shows conclusively that we cannot afford to dispense with their services in the future, if we would keep our schools progressing. We know that their methods are novel, and as such not always understood by parents or pupils; but the marked interest they arouse, and the consequent rapid improvement of their scholars, is the theme of praise on the part of nearly every one who took the trouble to visit the schools. We hope that our prudential committees will employ more such teachers in the future, much more than they have in the past.

We have recommended to teachers not to confine themselves solely to text-books, but to press other matters, indeed, all facts and objects, into the service of teaching, to illustrate ideas in education by the commonest and most familiar objects in nature. A celebrated writer has said, "Men are books, read them." We endorse the sentiment, and think it early, but at the same time care should be taken that the illustration is pertinent to the subject which is sought to be enforced, and that the scholar can see the point of the comparison, and he will remember it as he lives.

The Teachers' Institute held here last autumn, was well attended, and we think productive of good. An interest in school matters was awakened which shows itself in many ways. We hope that other similar

will be held either here or in the vicinity, before we are permitted to forget their design.

School Committee.—S. S. DEXTER, R. D. CHASE, WILLIAM HOOPER.

SHUTESBURY.

To parents we would say, let no interest be held in higher estimation than the education of your children, who are soon to take your places in the active scenes of life,—to hold places of trust and responsibility, to exert an influence in the community for weal or woe. The general diffusion of knowledge is indispensable to the permanence of our free institutions, wise and just laws, and a republican form of government; hence it is your duty to encourage and sustain the Public Schools which have done so much to elevate the character of the people of New England. Whatever else you neglect, do not neglect to give your children a good education; the law as well as your duty requires that you should do it. Send them regularly and punctually to school; see that they are well supplied with books; teach them to be obedient and respectful to their instructors; take an interest in their studies; visit the school occasionally and encourage the heart of the teacher. Be assured you will never have cause to regret having done what you could for the moral and intellectual improvement of your children; they will honor you in life and bless your memory when you are gone “to that undiscovered country from whose bourn no traveller returns.”

School Committee.—SAMUEL H. STOWELL, HENRY O. BRAGG, WM. K. VAILL.

SUNDERLAND.

We would that parents might appreciate in some degree the many trials and discouragements which beset faithful teachers in their employment, the trials of patience from the want of interest and industry which are too often seen in pupils; from rude and ungovernable natures, impatient under proper restraint; and from seeing their own persevering efforts for the good of their pupils met by no corresponding effort on their part; and added to these, the teacher sometimes looks in vain for sympathy and assistance from the parents of the children for whose good he is laboring. This ought not to be. We therefore entreat parents to encourage their teachers. Give them every possible aid and co-operation. If your children make complaint, remember how liable the account is to be prejudiced and one-sided.

The committee think that our schools may be very greatly improved by the better opportunity of more perfect grading according to scholarship, and also by fixing a more definite course of study for each grade, thereby

saving time to the teachers, by avoiding the unnecessary frictions of classes of equal advancement in the different grades of school. It is quite important that each grade should have its special work, and teach no branch which is pursued in a different grade.

School Committee.—WALLACE R. WARNER, GEORGE L. COOLEY, ELIHU

WENDELL.

As a town you have decided to retain the present number of schools, and should without a murmur accept the result, even to the loss of a portion of the State school fund. We regard this loss as the effect of retaining nine small districts; for we are firm in the belief that you will never sustain six months' school in each, during the year, yet we believe the requirement of six months of school for all children is not too much. Every child has a just claim upon the town for the privilege of attending school six months each year, and it is the duty of the guardians to see that this claim is allowed. Nor would we ascribe the failure of this town to come up to the statute requirements for schools, to the district system. Rather would we say, that with a sufficient number of districts and a suitable interest among the people of the town like this, where the scattered population forbids graded schools, the district system may be the most effective mode of sustaining schools. What is the practical working of the system in this town? For the past years, the districts have had their annual meetings, chosen confidential committees to contract with the teachers, some one bid on the school, and there, duty, interest and the work of all concerned in relation to the school, seems to end. Not a district tax has been levied, nor voted for apparatus, or any improvement. Scholars furnish their own water-pail and dipper, or do without.

A majority of school-houses in the town are unfit to be occupied during the winter school. Five of the nine ought not to be used again. They are unpainted, dingy, with broken door and windows,—providing no protection against wind and rain,—hard, mutilated benches, and four need thorough remodelling. We doubt whether there is a house in town that would sell at auction, for over sixty dollars. A majority of the districts are to-day liable to an indictment for not providing a suitable school-room. In such dilapidated hovels, with a mere apology of a blackboard, and with nine or ten scholars, can we have respectable schools? Will a good teacher go into such a place, for the second term? Or is it any wonder that scholars have left their schools?

The remedy for present deficiency is in your hands. When you are ready to act efficiently and wisely, you can have better

up to the statute in length. But no district can afford to build, or provide a convenient school-house, with modern improvements, furnished with desirable apparatus, for half a dozen scholars; it is not necessary and ought not to be. Make your schools fewer, larger, better, with houses neat and convenient, and we have little doubt that a few years' experience will convince you of the wisdom and economy of the change and expenditure.

School Committee.—WILLARD BRIGHAM, ANDREW BAKER, ORIN ANDREWS.

WHATELY.

If the question should be asked, "Why not empower the general committee to hire our teachers, if they, from their knowledge of the condition and requirements of our schools can best obtain teachers suited to their wants?" the answer to this will be, Why, that practically does away with the district system, and that will not answer. Why not? If the district system was abolished, would not the result be that the length of the school terms would be more nearly equalized? Would there not be more economy in furnishing our school-houses with wood and other things necessary for the schools? Would not the school-houses, by becoming the property of the town, be kept in a more uniform condition of repair? Would not the town then be able to dispense with one set of committee men, and would not then the money of the town be expended under the supervision of its own elected committee? Would it not invest that committee with an importance that is not now felt, and lead to the selection of the best men for the place? We think that no thoughtful man can answer these several interrogatories—except affirmatively. If four districts would select their best man for the office of school committee, and keep him in that place year after year, it would remove many of the objections to the district system; but we know that it is considered as a burden laid upon us, to which we must submit periodically, as is the office of highway surveyor, which often, but for the fine of non-acceptance and discharge of its duties, would be so frequently vacant. The principle is to take turns, regardless too often of fitness for the station. And the office frequently honors the man, instead of the man honoring the office. We are aware that these views may be unpopular in this town, but wherever they have been adopted in our towns there is no disposition to go back to the old system. Innovations on old and well-tried customs do not always result in improvements. And a view of leading the voters of this town to take this matter into consideration, has been our motive in bringing this subject before you in this manner. In the meantime, if the hiring of teachers is to be left as usual to the prudential committees, we would respectfully suggest to them a few maxims to govern them in the selection of teachers. Do not hire a person who is expecting an easy time. Do not hire one who

is not willing to give her best energies to the work. Do not does not love children and the profession she has chosen, and realize that "few situations in life require so much energy, so much tenderness, so much self-control and love as the of small children. To guide and govern them well calls for discern, versatility to modify, firmness to persevere, judgment such as no uneducated mind can supply, in the incessant careful diligence and the unwearied patience necessary in managing children." If such an one can be found, with the requisite to endure the fatigue, and the educational ability—secure such a teacher, less of the cost, and she will be cheap.

School Committee.—JAMES M. CRAFTS, SAMUEL C. WOOD, CHESTER

BERKSHIRE COUNTY.

ADAMS.

During the year numerous changes have taken place among teachers, but we trust these have not in many instances resulted to the schools. It has been the aim of the committee to secure high discipline and scholarship by employing the best teachers. The committee are fully persuaded that the schools cannot lose the services of the best teachers without serious detriment, and their aim has been to secure such at all hazards. The employment of teachers who have graduated at the Normal School has amply vindicated the superiority of the instruction there taught, and it will be their policy in the future to fill the vacancies which may occur with such teachers.

It is a fallacy which many have thoughtlessly adopted, that a little mental discipline to enable one to teach a Primary School is all that is needed. It is a certain tact in the management of children and the facility to teach that is about all that is needed. These indeed are indispensable qualifications of a teacher, for they furnish the first conditions of success in the education of the young, but there is something more than this needed. The most thorough knowledge of the fundamental principles of all that is to be taught, and aptness and facility in communicating it, are also necessary. The standard of qualifications should be little if any lower than that required at the Normal School. We want a corps of teachers in whose lowest ranks there shall not be one unworthy to teach in the highest. We want all that we can get at the Normal School in the Primary School. And in order

must have trained teachers. To secure these a Normal course of studies has been adopted in many of the High Schools in the Commonwealth. In this course the elementary studies are taught with special reference to teaching. If this plan could be adopted in our own school, many of the pupils might be fitted here at home for teachers, and at far less expense. The difficulty in procuring teachers who have been educated in the Normal Schools makes this an object worthy our earnest consideration. In the mean time the committee will find it their duty to raise the standard of qualifications as much as possible, and it will be their aim to fill all vacancies which may occur with the best from among the candidates, yet other things being equal, giving the preference to those who have been trained in our own schools.

School Committee.—F. O. SAYLES, L. M. BURRINGTON, JARVIS ROCKWELL.

ALFORD.

It has occurred to us that it may be worth the inquiry of those interested, whether the number of schools may not be reduced—whether the schools No. 3 and No. 4 may not to the advantage of all persons interested be merged into one school. We know the objection may be raised to such a measure, that the distance from the school for some children would be unreasonably increased. True, the distance for some children would be increased, but would not the advantages growing out of such an arrangement more than counterbalance the disadvantages,—would not having twice the amount of school with no more, and indeed less expense—would not the saving of the teacher's wages, board, fuel, &c., necessary for one school, operate as more than an offset for many or all the inconveniences apprehended? It seems to us that the advantages growing out of such an arrangement would much more than counterbalance the disadvantages. It has been shown at the commencement of this report that the whole number of children attending school during the year is but sixty-six—average attendance forty-four,—no more than enough children for one good sized school. Now we submit in all candor, is it good policy, is it wise, to employ four teachers to keep up four schools with all the attendant expenses, when one good and competent teacher could better perform the duties of all? Our opinion can be inferred from what we have written. We are fully confirmed in the belief that if all our schools could be merged into one good and efficient school, the whole community would be largely the gainer by such an arrangement. But if such a proposition cannot be entertained, and we suppose at present it cannot, let us strive to do the next best thing, to wit: reduce our number of schools one-third or one-half, and not

employ four teachers to instruct an average number of eleven each, at an expense of at least twice what it should be.

School Committee.—HENRY TICKNOR, LESTER T. OSBORNE.

BECKET.

The law provides that "in every town there shall be kept six months in each year, at the expense of said town, by teachers of competent ability and good morals, a sufficient number of schools for the instruction of all the children who may be enrolled in the Public School therein." Understanding that this statute requires six months' school yearly to each district in a town which has adopted the district system, and that without complying with the same, to lose the State appropriation, your committee felt constrained to close some schools which closed prematurely, although it was for the benefit and to the temporary disadvantage of said districts. Because of the schools having closed in those districts, the funds there expended would have proved more beneficial another year. The law left no other course to be pursued. By this experience we learn wisdom for the future. This patchwork must prove a bad example and we trust it will not again occur. Let prudential committees see to it that a good supply of wood is seasonably provided, and the necessaries for the convenience of the schools are at hand, and let the teachers duly inform the school committee when the schools in their respective districts are to close, and something will be done to prevent evil, and the committee be greatly aided in their work.

School Committee.—J. HARTWELL, C. O. PERKINS, A. W. CROSS.

CLARKSBURG.

The committee would recommend that parents oftener visit the school, speak encouraging words to the teacher, and let the children see that some interest is taken in their progress, and not, when you have paid your money, elected your committee, think your task is done, and that the children will have a good education even if they do not see the teacher in a school-room, or at most see it but one or two days in a week.

Such persons, we find, are more apt than others to blame the teacher for not making an accomplished scholar of one he scarcely knows, when it is so seldom he attends school. The committee likewise find that parents bear their share of blame for not hiring a teacher who can teach, and who is seldom seen in the school-room. But we have many honorable exceptions to these cases,—persons who try to lighten the burden both

and committee. Irregularity of attendance is felt in most of the schools, and is a very great hindrance to the success of the scholar. It is to be regretted that parents cannot be made to see the serious and irreparable injury to their children, of keeping them from school for the most trivial causes.

It is impossible for scholars to make any advancement in their studies when they are permitted to absent themselves from school just when they please. Parents whose boys are absent from school two or three days in a week, and when present are late nearly every day, sometimes inquire why their boys do not make more improvement. They will find an answer to their query by referring to the register of the school, whose blackened and disfigured pages testify to the impossibility of any proficiency where there is such a want of punctuality. But parents, your children are learning; they are perhaps making greater progress than you are aware of in the arts, sciences, and manners usually taught in the street school. Their rowdyish deportment, low vulgarity and profanity, show they are apt scholars in this school.

School Committee.—ELI T. CLARK, RICHARD SHATTUCK.

EGREMONT.

But no school can truly succeed without the co-operation of the inhabitants of the district. With the best of teachers, serious failure on their part hinders its progress; while with a teacher but moderately competent, fidelity on their part may insure a large success. There are many ways in which this needed co-operation may and should be given; such as providing suitable school-houses with convenient fixtures and pleasant surroundings; keeping their children regularly at school; jealously guarding the teacher's reputation from needless reproach; discountenancing tale-telling on the part of the scholars; visiting the school from time to time; speaking encouraging words to and of the teacher as the truth will allow; and finding as little fault as possible with his methods of government and instruction; and last, but not least, paying him well for his work.

The relation of the school teacher to the families of the district, through their children, is one of extreme delicacy. By virtue of this relation his work is beset with peculiar difficulties. That he should please all alike is not to be expected. To conduct himself so that all shall think him faithful without partiality, is perhaps impossible. Teachers, like other people, are liable to mistakes and errors, and therefore render themselves liable to much fault-finding and to many injurious remarks. The extent to which these are often indulged in, is not only cruel to themselves, but sadly detrimental to the interests of the school. If there are, as some-

times happens, real causes of dissatisfaction and complaint, instead of being noised through the district, should be brought before the town committee, who may be expected, as in duty bound, to reprove, or remove the teacher, as the best good of the school. This is the only proper course to be pursued in all such cases.

School Committee.—T. A. HAZEN, J. H. ROWLEY, CHAS. J. POTTER.

GREAT BARRINGTON.

The school at Long Pond was taught for ten months by a teacher who could hardly fail to give satisfaction in any school, and it is needless to say that she did not fail at Long Pond. We can but compare this school, averaging about seventy scholars, with the Housatonic school, which we have just spoken. Here are two schools employing teachers equal in qualifications and entitled to equal wages. Both districts incur equal expense in furnishing and warming one school-room, and both respects so far as the means of communicating knowledge are equal, they are usually about on an equality. Yet in the one but eight are receiving instruction, while in the other seventy are in attendance. In one the teacher can devote nearly an hour of each day to each scholar, in the other the meagre allowance per scholar is less than that. In other words, the children who attend school at Long Pond receive the advantage, so far as personal aid from the teacher is concerned, in a proportion of about ten to one over those who attend at Housatonic. Surely this cannot be that equal and just system of Common Schools designed by the laws of Massachusetts! It must be that if the people of Great Barrington perfectly understood the glaring inequality of the present system they would, in the language of last year's report, "throw away the existing rottenness."

As a whole we are of the opinion that the schools have been doing this year all that could be expected considering the implements used, the system followed and the price paid. We say considering the implements used. Let one of our farmers accustomed to modern agricultural implements undertake to raise a crop by turning over the soil with a horse-fashioned plough flanked with a wooden mould-board, by reaping with a sickle, and thrashing with a flail, and he will be ready to confer a verdict between the implements used and the result produced. The same is true in the education of its youth the implements of fifty years ago. In the same school-houses, the same apparatus when there is a change, frequently the same text-books are used now that were used by the fathers. Is it not possible that some improvement may have been made in the means for cultivating the mind as well as in those for cultivating the soil?

We said too, considering the system followed; properly the expression should have been considering the want of system. Our schools are like the Fenian Rebellion. They have a head centre in every district, but a centre head nowhere. We do not say this to reflect upon the prudential committee, nor to complain of the existing district system—albeit we have but a poor opinion of that system; but to suggest that there should be some one responsible superintendent of the schools whose duty it should be to hire and examine, to visit schools, and if necessary dismiss teachers. A duty that devolves upon either or all of a number is likely to be performed by neither. Another and more important step towards bringing about a uniform system would be made by the town's raising and appropriating money sufficient to support a High School during at least three months of each year. As a man who labors with no definite object, is likely to accomplish nothing, so a child who has no aim in studying will make little progress. Establish a High School and you will have a goal to reach which the best scholars in the several districts will direct their efforts. Among these scholars so brought together there will spring up a generous spirit of rivalry and they will unconsciously carry uniformity to and raise the standard of education in the most remote portions of the town.

For the Committee.—HERBERT C. JOYNER.

LANESBOROUGH.

The reason why a sum of money, once ample for the support of our schools for the term required, is now insufficient, will be evident on a little consideration. In former years the board of the teacher and the fuel for the schools were almost always furnished gratuitously. They were of little pecuniary value. But now all this is changed. The price of wood has risen from three dollars per cord to nine dollars. The price of board has doubled. In some districts the teacher cannot board around, and her board must be paid from the public funds.

These items are now too valuable to be given away any longer. It sometimes comes to pass that the board of the teacher is equal to her wages,—so that a sum which would provide a six months' school if board were given, will secure but three months under the present system. The wages of teachers have not advanced proportionately. They have rather been depressed by the necessity of paying both board and wages from the sum from which wages only were designed to be paid.

The necessity of six months' school, and the wish to make a given sum do double duty have been the two mill-stones between which the teachers have been ground.

The committee would suggest to the town that this saving of fuel at the expense of our schools ought to be refunded. The cost of this just restitution we thus estimate.

There should be fourteen teachers in this town for three months. Their board at three dollars per week, an average, would be \$126. If the families of the town save this sum, let them restore it to the school. This arrangement will do justice to those whose families are saving no children, and who might board the teacher with ease, and to those whose families are so large they cannot.

If the town will restore to the school funds the sum of \$500 this difficulty will be relieved and the machinery will move with ease as in former days.

The school committee in consequence of this reduction propose to increase, not by reducing the wages of the teachers, always insufficient, by increasing the summer term, and diminishing the winter term farther, by conforming the rate of wages paid in winter more nearly to wages in summer.

We regard the services of a competent lady as in no way inferior to those of a gentleman, and the worth of six hours' labor in winter is more than the same amount in summer. We think the chief reason for the cost of winter schools has often been double that of equally good schools in summer, has been the groundless preference generally given to men. A perusal of our school reports will show that while the schools are steadily advancing in our State, ladies are rapidly displacing men in Public Schools, and not only do they seem better fitted by nature, but they have fitted themselves by special training, while the few men who remain in our Public Schools are the best, who will be retained for a long time, and the worst who are not fit for any of the many more employments open to men but closed to women.

School Committee.—LEWIS P. CLOVER, HENRY PRATT, CHARLES NEWMAN.

LEE.

Last summer we instituted a series of monthly meetings for teachers and others interested in the cause of education, at which were discussed the best modes of governing and teaching, and the course of study adapted to develop the youthful mind. These meetings were well attended and the discussions were well sustained and some progress was made, and we think we already have seen the advantage of the improved condition of our schools the past winter. There is still a margin for further improvement, and we trust these teachers' meetings will be continued, and will be attended not only by teachers but by parents. They cannot fail to stimulate thought and arouse

Teachers need to compare notes with each other as well as ministers, lawyers, physicians, and farmers. The profession of the teacher ranks, in our judgment, next to that of the clergyman, and the office needs to be magnified and its responsibility more keenly felt. We know of no better mode to stimulate teachers than by calling them together in these meetings, where they can learn from each other's experience and feel the spur of a generous rivalry.

School Committee.—ALEXANDER HYDE, ARTHUR GILMAN.

LENOX.

Nearly all our registers show a very large proportion of absences,—so large as to admit of no explanation, but either the lack of any just sense of the importance of education, or a neglect to consider the absolute necessity of constant attendance in order to make any satisfactory progress. This is a very prevalent evil, as we learn from the reports of the school committees throughout the State, and too much can hardly be said to awaken parents to a sense of the great wrong they are doing their children in depriving them of opportunities so essential to their success and welfare in life. Far better to allow the spring days to go by without casting our seed into the ground, than to let the season of youth pass without implanting the elements of knowledge and wisdom in the minds and hearts of our children; for if one spring be lost others will come, and the neglect of one may be at least partly retrieved by increased diligence in those that follow; but youth passes away and never returns, and if its proper work is not done in its time, no subsequent regrets or endeavors can make amends for the neglect. Every one who has at heart the highest good of his children ought to see that they are regularly and punctually in their places at school.

But something more than this is needed. We cannot but think the time has come for important changes in the schools themselves. Hitherto it has been customary to have during the year two sessions of about three months each, and generally with different teachers. In consequence of these frequent interruptions and changes, there has often been, instead of a continued progress, little more than a mere repetition from one term to another of what had been attempted and partly accomplished before, and many at the end of the year have advanced but little farther than at the beginning. It deserves to be considered now whether at least some of our schools cannot be continued throughout the year with only such intervals as may be desirable to enable teachers and pupils to return with new energy and success to their work. The liberal sum voted for the ensuing year at the late town meeting—\$2,750—would perhaps be sufficient to sustain five continuous schools, and it is a question of great practical inter-

at, whether on the whole more favorable results could not be saving this number with permanent teachers, than by the short frequent changes occasioned by the present number of district

School Committee.—J. FIELD, S. S. JENNE, G. M. MATTOON.

MONTEREY.

One prevailing evil, perhaps irreparable from the present management, is the frequent change of teachers. A new teacher into a school, requires some weeks to become acquainted with and to organize the school, before she can teach with full waste of power and change of system, twice every year, serving the progress of the scholars. And of course a teacher who conduct the school for only one term, cannot feel the same responsibility as if the connection were to be more lasting. The committee therefore present it as being desirable for all parties, if a capable teacher has been secured she should be retained as long as possible.

School Committee.—M. S. BIDWELL, Jr., C. E. HEATH, A. B. GARFIELD.

SAVOY.

There is a want of interest manifested by the parents of in not visiting our schools as often as they should, to examine the teachers, and not only the teachers, but the scholars. In all transactions, if we pay out a dollar, we look well to see if it is money's worth; but every year we raise hundreds of dollars expended for the education of our children, of far greater value to them than gold, "yea, even than fine gold." It is better to leave them a legacy which no speculation can effect, no bank can take from them; the slanderous tongue cannot rob them of it. Let them possess this legacy through all the various changes of life. Education is of more value than gold to our children, let us all take a deep interest in the welfare of our Common Schools; let each parent put in his own mind that he will visit the school at least twice every term the coming year. Every parent ought to feel a deep interest in the welfare of the rising generation, for they will soon take our place on the active stage of life, and wield the destinies of our commonwealth.

Chairman.—Z. E. KEMP.

SHEFFIELD.

To another subject we would call your attention. How shall your committee answer the following questions to the Board of Education? "Has the town made the provisions and arrangements concerning truants and absentees required by law?" "Is there a High School taught by a teacher qualified to teach the Latin and Greek languages, and kept for the benefit of the whole town?" "How many months in the year was such High School kept?" "Is such High School supported by taxation, and the salary of the principal of such High School?" The law requires the establishment of such a school, and its continuance for nine months in a year in every town containing five hundred households, and a delinquency in this matter exposes the town to the severe penalty of the law.

The influence that such a school would exert, affords the best argument in favor of its establishment. It would be a great light among you,—a model of good instruction and scholarship, throwing its illumination over all else. It would be a goal encompassed with goodly prizes and with noble attainments, to whose possession your sons and daughters would aspire! Such a school would afford educational advantages to a class of advanced youth among you. It would train them in the higher branches and educate them for business and for life. They are a class you cannot afford to spare or leave uneducated,—a class of active minds that need only to be educated to do honor to your town. They are marked out for the pillars, the chief supports of society,—the real soul of the next generation; and shall the town begrudge the pittance from its hoards that will fully qualify them for their high vocation?

The interest parents should take in the education of their children should be more shown and increased. Their support is essential to the success of every teacher,—and what a deficiency in this respect will our registers exhibit? Parents should see that the teacher is doing his duty by frequently visiting the school, and that the scholar is never absent or tardy, except by unavoidable necessity. Again, the little faults of teachers must not be noticed. Teachers are human beings, the best of them; consequently they will commit errors, faults in instruction, faults in governing, faults in social intercourse, and these being dwelt upon and magnified will breed dissatisfaction; whereas they ought not for a moment to interrupt our confidence in them, for they exert a moulding influence upon the character and life of the pupil, and often their words impress the hearts of scholars more than parental instruction.

One of the most serious impediments to the success of our schools is the manner in which the teachers are selected. The law provides that unless the town shall determine otherwise, the duty of selecting and contracting with teachers shall be discharged by the school committee. The

town may transfer this duty to the prudential committee of districts, and it has been the practice of this town to do so. There are serious objections to this course which demand attention. Teachers are the servants of the town and not of the district. Every dollar expended in the Public Schools is raised by the town, not a dollar by the district. It is but just, then, that the town should select and contract with teachers who must be paid by the town. As it is, the town's committee are responsible for the manner in which money is expended; for though the prudential committee may contract with a candidate for a school, that candidate cannot teach in a school as a teacher without the approbation of the town's committee. The town's committee can approve none but such candidates as are selected and presented by the prudential committee. Heretofore a wise policy and a very serious one. The town's committee may select competent teachers, from whom, if left to their choice, they would select one for a particular school; but in this town, instead of selecting from so desirable a source, they are compelled to forego this advantage, and accept one of only such candidates as the district agent may present. And more than this, should they charge the painful duty of rejecting a candidate, they offend the district agent and his friends, and cause a rupture in the whole district.

There are two instances in this town, where a teacher has given satisfaction to your committee, and to forty-five out of fifty of the children, but because there was one dissatisfied, the prudential committee has been changed, thereby preventing the continuance of a teacher who had gained the knowledge of the disposition, characteristics and abilities of the pupils, and, of course, infinitely more calculated to instruct and teach those children. But no! a new teacher must take the place. We appeal to men of business,—would you be satisfied with selecting your help? Would you, intelligent farmers, be willing to leave the care and feeding of your stock to such change of keepers? The town committee, by their acquaintance, examination and knowledge of the success of a teacher, possess a vastly superior advantage in selecting the best adapted to a particular school? And how often do we have the privilege of sending a teacher to a school where their qualifications would be satisfactorily appreciated. We leave this to your future deliberation and action; and in conclusion would we appeal to our fellow citizens “to adopt enlightened views upon this subject, and take those timely steps that will secure for them a comprehensive and sound practical education, which is better than gold and rubies.”

School Committee.—H. D. TRAIN, B. N. CLARK, FRANK ROYCE.

TYRINGHAM.

We are too much given to change in our school matters. Every year brings a new agent; every term a new teacher. It is made imperative upon us to adopt the town system in three years, unless the law should be altered. If we should come to this it would be a remedy for such constant changes. As it now is, we think it would be well for the prudential committee to hire for the year, or with the understanding that the teacher would be wanted a second term if he succeeded well the first term. If a teacher succeeded well one year, the new committee would be under some obligation to employ the same one. Thus a teacher would have some ambition to establish a reputation, and it would be beneficial to a school to continue the ways and system of a good teacher through several terms. A high degree of excellence in a school cannot be expected with a new teacher every term, though they may be good ones. It takes too much of the time to learn the character and ability of the scholars, the place, and the people.

School Committee.—GEO. W. GARFIELD, JEROME CRITTENDEN, CHAS. E. SLATER.

NORFOLK COUNTY.

COHASSET.

We cannot hope to retain the services of good teachers for the small salaries we have been accustomed to pay, nor can we secure the services of successful teachers from other towns, or hold out sufficient inducements to encourage young ladies to educate themselves properly at home. It is getting to be serious business to secure competent teachers for our schools. We have thus far been able to effect it by taking imperfectly educated and inexperienced young ladies, and permitting them to learn the art of teaching by practice on our children, without any professional education for their work. We should be unwilling to submit our children to imperfectly educated and inexperienced young surgeons or physicians to try practice upon, in order that after much false practice and sacrificing many lives they might acquire skill and experience in their professions. No more reasonable is it that we submit our children for a year or two, at the most tender and susceptible period of their lives, to crude and unwise teaching, which may give so wrong a bent to their mental action, or so disgust them

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with learning that their education will suffer a permanent injury. Yet such is the process by which we have been educating our teachers. When we could secure their services for a few years we could better afford to endure this process, but we shall have as many changes in the future as we had the past year, and we will soon seriously suffer. Without the least disparagement to our teachers it may be asserted, that they all need a more broad education for their work, and instruction and drill in the business of school teaching and discipline. But the compensation which we now presents to them no motive to make this preparation. Our teachers deserve high commendation for their faithfulness and industry, and their persistence in the face of great obstacles, and the efficiency as teachers which they have acquired through experience. Probably no class of persons do so much good work for so small pay, as our female teachers. It is not only not wise for the town to continue to give to them so small a salary, but it is a mistake. If their salaries are properly raised, we can justly require a higher preparation for their work; and if we fail to attract more educated persons in the town to take charge of our schools, we must offer some inducement to competent teachers from out of town to come to us.

School Committee.—JOSEPH OSGOOD, EDWARD TOWER, L. N. BATES.

BELLINGHAM.

Parents should co-operate in the maintenance of good order in school. Order and discipline in school are absolutely necessary. No matter how able or apt the teacher may be to instruct, but little improvement can be made amid scenes of misrule. He must be master of his class, or they will be in subjection, or fail to benefit them. We advise our parents to mean to sustain our teachers in the use of all proper means to attain the end. Severity, we neither counsel nor advise, until moral suasion have been tried and failed. Whether all children can be effectually so governed, and corporal punishment wholly dispensed with, is a problem yet unsolved. There are cases where no sense of duty, or feeling of interest appears, responsive to appeal, and no power to secure good conduct. Kind treatment instead of melting the will, increases the fractious spirit to rebel against all restraint. Such children should be excluded or removed. And but few teachers can control the unruly child without the rod. If children were uniformly well governed at home, it would be far easier. But while the majority maintain home government, we cannot expect it at school, others are not only lax, but averse to wholesome discipline.

both at home and abroad. And most of the complaints of ill-treatment made, come from this class. It is not strange then that teachers should observe this, and act accordingly. Whether they sympathize with the feeling or not, they dread a collision, both with the unruly child and the ever indulgent parent. Hence the origin of many difficulties. If the teacher yields, confusion prevails and failure is certain. If he resolutely maintains order and obedience by using other than mild measures, the child enters his complaint at home, where he expects and finds sympathy. His story is believed and his conduct justified, sometimes without an effort to ascertain the facts. And while he remains, he is the cause of constant annoyance. All our District Schools have been taught, during the year, by females;—a sufficient reason why parents should train and civilize their children at home, so that they will need no punishment at school. One unruly boy may prevent success entirely. Nor does the effect end there. He is forming a character and habits of life unlikely to be changed, and which give but poor promise that he will become a useful and law-abiding citizen. "Train up a child in the way he should go, and when he is old he will not depart from it," is not only a wise and timely admonition, but it is full of far-seeing sagacity.

Parents might co-operate advantageously by retaining and more thoroughly training the younger children at home. We do not advise a rigid system of discipline to task the minds of young children at home; that will come soon enough otherwise. The law, we think, requires their presence quite soon enough for their advantage in our District Schools. The number attending under five years is not large. But two or three such, in a large school, may be a serious drawback. As we have no Primary Schools, we have not excluded them, though we doubt the utility of their being present for various reasons.

They are often sent, mainly to be taken care of by the teacher, who has generally cares and vexations enough without being made nurse to several families besides. Such children are naturally restless, and require too much of the teacher's time to allow justice to those who can be benefited. And the physical constitution of the child protests against the practice. To send him to school, confine him several hours a day on a hard bench, in a hot and stifling room, teach him unmeaning signs, when he should be learning things, sporting in the open air to invigorate and train the vital organs into health and power of endurance, is a cruel mistake. It is a law of nature, that physical education should precede mental. Develop the body, partly at least, before you tax the mind, if you would have "a sound mind in a sound body."

School Committee.—JOSEPH T. MASSEY, GEO. N. TOWNSEND. •

BRAINTREE.

Reading.—Sufficient attention has not been given to vocal reading. From the very defective articulation, the words being insufficiently separated from each other, and some letters which constitute a word and which should be fully sounded being omitted, it is frequently quite impossible to understand the passages recited. To remedy this defect, the pupils should be carefully drilled in the pronunciation of letters, both separately and in their various combinations, special attention being given to those combinations of consonants which are difficult to utter. Words should be deliberately pronounced, until their elements become so familiar that the scholars can recite them. Ten minutes a day used in drilling a whole school in this manner, indicated, would soon produce valuable results in the improvement of the reading. No excuse is sufficient to justify neglect in this mental art, so useful to all in every sphere. Yet in but a single Intermediate Ironworks, have we heard an exercise of this kind in the year.

Teachers' Accomplishments.—We are free to say that we think a teacher needs other qualifications than mere scholarship. A teacher with good temper, discretion, tact, taste and polite manners, is likely to win with more or less difficulty and involve a school so as to be of great usefulness. Have all our teachers given so much attention to their personal manners as they should? It is an important matter that one who has intercourse with, has the educating of, and who is a standing example to a large school, should possess good manners, at least not allow bad and ungainly habits to crop out. Refined manners will yet be held in a premium in this country as in parts of the old world, and to secure them must be in care of those who are polite as well as those who are not.

Corporal Punishment.—This is a subject which has been very much discussed in this State, especially during the past year. No wise and judicious educators of the present day, practise or justify the use of this form of punishment. The habit of inflicting it for trifling faults or for slightly imperfect recitations, especially when the scholar fails, and then not through wilfulness, but from trepidation or forgetfulness of memory, certainly can have but few supporters. Neither can it oblige a teacher to punish a child in this manner simply because another child was necessarily so punished. The fashion for the teacher to enter the school-room with part of a willow-tree, rattan, or cane, and to carry it most conspicuously among his equipage, and like the soldier on post with his firelock at shoulder, and finger on the trigger, ready for a shot, so the teacher with one eye always on the cudgel, and ready to blow without parley, has nearly become obsolete, and we doubt

quarter of a century will consign the cudgel to a "Barnum's Museum," to be properly labelled, "By tact and talent vanquished."

According to the stories of our fathers, in their day the pedagogue who could enthrone himself in a twelve by twenty feet school-house, and rule among the little broken spirits by craven fear only, having often established brute supremacy as it is established among the cattle of the field, by a fight at the outset, and whose arm would endure to lay on the blows "thick and fast," was the teacher *begu ideal*. The traits of the wooden brigade have, however, come down to but few of our present teachers, and these will ere long it is to be hoped exhibit more tact, taste and judgment in school government, and show more culture and acquaintance with the moral and reasoning forces than skill in the use of the rod. Whether this sort of punishment be light or severe is of but little consequence, (except when the child is physically injured;) it is the kind, the form of punishment, that is objectionable. We would not have corporal punishment stricken from the list of punishments; indeed, sometimes though rarely it proves to be the only means by which an obstinate scholar can be reduced to subordination. The difference however between obstinacy and lack of memory or ill-trained memory is very great.

Cheerfulness and hope are the stars which the teacher should seek as aids and delight to magnify. These are stimulants which do not wear out the powers under their control; tonics which properly directed tend to rear a noble structure; and though they may induce harder and longer labor, yet will they less fatigue than anxious, fearful motive.

Over Hours.—A word in regard to this matter seems necessary. There has been much intelligent discussion of the subject by many of our best educators and sanitary men. All agree that six hours a day is the maximum time children should be kept in the school-room; and a large proportion contend that it would be far better for the health of the children, and as well for them mentally, were the time reduced to five hours. Would it not be impossible to find in any town a score of adults who would be willing to sit six hours a day, months together, and from ten to fifteen years, upon as hard benches as those of our school-rooms, let the inducement be ever so great? Were they to attempt it, we are quite sure the physical results would be as they are with a large proportion of school children, viz.: aching kidneys, cramped lungs and livers, crooked spines, shaky nerves and excited brains, ultimating in premature decay.

"Another cause which undoubtedly acts strongly to induce insanity is the unwise system of educating the young. For the healthy adult, fully developed and used to the kind of labor, six hours daily of concentrated mental labor is enough to try his strength, and in many cases ultimately to impair his nervous system. Yet our young children, with faculties just beginning to develop, with bodies needing almost constant exercise out of

doors, and in the highest degree susceptible to all influences, or bad, are confined for that full period in the regular hours which they are often besides compelled to spend several hours in preparation."—*State Lunatic Reports*.

Yet there are teachers who either thoughtlessly, ignorant, pass by all physiological light, and continue daily sessions not to nearly seven hours.

School Committee.—N. L. WHITE, T. H. DEARING, NOAH TORREY.

CANTON.

Superficial Education.—We can hardly take up a paper without seeing a flaming circular, setting forth the advantages of that "institution" offering to turn out finished students or men in a remarkably short space of time. We do not wish to cast aspersions upon any of these mercantile "colleges" in particular; and perhaps all of them are very well in their way, and after children have been through a thorough course of training in the Public Schools, and desire to know something about business, then let them go to these schools. But pray distinguish between the shadow and the substance,—the true and the false. The acquiring of a good education is the work of years, and sound knowledge is not gained in a day. Don't let your children deceive you by representing that if they can only get away from home, they can acquire a thorough education in a few months. Many young persons who are tired of the monotony of a well regulated school-room, for six long hours during the day, are anxious to go away from home to some place, where, as the circular reads, they will be "treated as gentlemen." This inducement means in plain English, that they can do as they like, added to the attractions and allurements of a large city, fascinates them, and just when their habits are forming, and when their associates should be chosen with great care, they leave home. Transplanted from the soil where they were born, and placed under foreign influences, their reason undeveloped, fails to guide them; and instead of improving their minds, they are apt to squander both that, and their parents' money. Again, it is a marked objection to our Public Schools that their children, after having been slowly wading through fractions in the District School, then a complaint from the teacher, of the laziness of their children, when put into an Institution with a high sounding name, in a fortnight come home with the report, that they are studying "Geometry" and "Astronomy." The parents hold up their heads in amazement, and the boy and the Institute are pronounced by the wondrous of the nineteenth century.

Now *what* will be the end of this kind of education, even if parents are not humbugged, and their children escape the numerous evils incident to childhood and youth? Will they be able to bear the burden of life, and make good the places of those who have gone before? It is estimated that there are in New York City to-day, twelve thousand young men who have been educated in this way, and who are now doing work which properly belongs to the opposite sex.

If you would have your child a merchant, a manufacturer, an agriculturist or an artisan, educate him in such a manner that he can rely upon himself.

In this country, where every man has a voice in the government of the country, it is doubly important that every child should be educated in such a manner as to prepare him to distinguish between popular fallacies and sound truths. We appeal to you, parents, do not deceive yourselves in this important matter. Stupidity, incompetency and dazzling pretension, wear their fictitious plumage but a short time. Great ideas are abroad, challenging the encounter of our youth. The present is ever the rival of the future. Angels wrestle with the men of to-day, as with the Patriarch of former times. Pay strict attention to that, and to that alone, which will constitute for your children, the best training for the actual business of life.

Superintendent.—D. T. V. HURROON.

DORCHESTER.

Regular and punctual attendance at school is, in many households, regarded as something of but slight importance; and the domestic duties which might easily be performed out of school hours, the pleasure excursion, the earning of a trifle by some irregular work, and sometimes merely the wilful fancy of the child, are freely allowed to interfere with the time that should be spent at the school-house. The evil of this is manifold: the pupil is led to think that his education is a matter of but the smallest consequence; habits of irregularity are formed, which may never be overcome; the value of the attendance actually given is much lessened by its frequent interruptions; and great injustice is done to the more constant scholars, by the hindrance to the progress of a class caused by the irregular attendance of some of its members. This evil prevails in some schools more than in others; and the teachers, though unable to correct it entirely without the co-operation of the parents, can do much by precept and example to influence in the right direction both parents and children. Let a teacher be in his place promptly at the prescribed time, conduct his exercises with a regularity and a precision that show his own appreciation of the value of order, be slow to seek leave of absence from his duties except when absolutely needful, and the effect cannot fail to be beneficial.

to his school; while, if he be careless in his attendance, in ordering of his work, ready at finding excuses for avoiding and his scholars will be confirmed in 'the notion that school is to at every opportunity.

The too common practice of removing children, especially school, just at the time when they have grown old enough to proper effort, good progress in their studies, unless such removal is absolutely necessary by their health or by the pecuniary circumstances of their parents, needs special consideration. It is natural for a himself more near to manhood when engaged in some mechanical out-of-door work, in however humble or insignificant a capacity, when staying quietly at his studies under his teacher's immediate supervision; but the parent who gratifies his son's fancy in regard to this, yield to a passing dislike to a teacher, or to a disinclination to do him an injury that can never be fully made good.

It is very generally the case that parents seldom visit the school, or seek the acquaintance of their children's teacher. The confidence satisfied that, were intercourse between parent and teacher more frequent, much help would be got therefrom, some misunderstanding or might be avoided, and the two parties might work more nearly for the welfare of those under their charge; and they believe in expressing the feeling of the teachers, as well as their own, by urging attention to this matter. An hour's visit to her child's school will often show a mother who feels some dissatisfaction with the mode of discipline, and who forgets how her own patience is tried and her authority set at naught by the half a dozen little children; that the management of half a hundred such, without parental aid, and sometimes with parental influence acting adversely to proper results, is by no means an easy matter. A talk of a few minutes between a parent and a master may bring about an explanation of the latter's action which may clear away doubts that troubled the former; while the parent may, on the other hand, be able to give suggestions to the teacher regarding his child's temperament or bodily condition, that may materially aid in his management and instruction.

Chairman.—HENRY G. DENNY.

FOXBOROUGH.

Object of Instruction.—That object is preparation for the performance of the duties of manhood. If those duties referred only to the support of a living, we should furnish the young with the best education in the power. Nothing is more frivolous than the thought that preparation for physical labor can dispense with literary culture. Will the

to more profit with a mind strengthened by exercise and enriched by learning? They will be men as well as laborers. They will sustain highly important social relations. They will be heads of families. They will be voters, jurors, assessors, selectmen, representatives; and in these positions will need a sound judgment and an ability to think wisely for themselves. Allow me to repeat here some thoughts that I have used in another connection: "Suppose a man passes through life as a laborer; will the most varied culture hinder him? Will he be a worse mechanic because he knows that his art is based on the principles of natural philosophy? Or a worse farmer because he understands the doctrines on which a rotation of crops is founded? Or a worse manufacturer because he is familiar with the principles of machinery? Or will a knowledge of physiology and the conditions of health impair his ability to labor? The highest polish we can give to tools does not lessen their efficiency; and the utmost amount of school learning a laboring man can get is the best preparation for his apprenticeship to his special calling. Sharpening of the faculties and acquired knowledge, enable him to begin his business studies with a promise of success." If the great majority of our people must earn their bread by their daily work, they should be furnished with the means of doing that work with less effort and more profit; and we, whom they choose to watch over their educational interests, must shrink from no labor or sacrifice by which we can promote this end.

Primary Schools.—Parents avail themselves of their right to send young children to school. There is no objection to this, provided they form reasonable, and therefore moderate, expectations of their attainments. At six years of age a boy does not know how to learn from books. It is the very thing he cannot do. To some extent this is true of older scholars; and because they cannot, and fail when they try, they become disgusted with the school, and with whatever is connected with it. At six years of age a boy's main business is to grow, to pass his time harmlessly, and to get knowledge by observation. If he attends school, his teacher should educate his perceptive rather than his reflective faculties. His unnatural confinement should be made as little irksome as possible, by frequent changes of position.* His teacher should be one who loves children, and delights to lead them into pleasant paths; "to enlist pleasure on the side of intellectual performance is a point of the utmost importance." Children cannot work to advantage unless they are happy. Hence a Primary

* A writer in the "Atlantic Monthly" for March, 1867, says of the schools in Chicago: "No little child is allowed to pass more than half an hour without exercise. In higher classes the physical exercises occur about once an hour." In another connection he observes, "The peril of America is the overschooling of her children. Five hours school a day, with no lessons learned at home," is all that he would prescribe; and even within those five hours there should be a long intermission.

School teacher should cultivate the senses of children, should to see and hear accurately, to get correct notions of colors, distances, proportions, weights, and measures; to become acquainted with trees, grasses, and other interesting natural objects. It is not that a young child should spell Constantinople, or tell the height in inches, of the Himalayan Mountains; but it is desirable that he should know something of the world about him, and learn to venerate the greatness and wisdom displayed in its arrangements. This requirement, perhaps, be extended to the Grammar Schools, in which, by the use of reading books, much really valuable information in regard to history and to the philosophy of common life, might be gained without the loss of a moment's time.

The Primary School especially needs visible aids to learning, such as pictures of beasts and birds, of trees and flowers, models of geometrical and arithmetical frames, and whatever else may properly excite the attention of children, so that the teacher's instruction may be confirmed by their own observation.

No school more needs intelligent and sympathetic teachers, who can make a favorable impression on the moral feelings, and give direction to early intellectual exercises. It requires teachers of high character and habits. A teacher cannot do justice to her pupils unless she cultivates herself, enlarges her sphere of thought, and adds to her store of knowledge. It is a mistake to suppose that anybody who is one less in the ranks of the classes can teach a Primary School. It is an office that requires much experience and the power of ready illustration, as well as a special aptitude for the minds of little children. Of course I pass no censure upon any teacher heretofore employed in the Primary or other departments. The standard of all our schools are as good as the general opinion calls for, or as the State is willing to pay. But if we would have the best schools, we must have the best teachers; pay them liberally, and give them permanent employment. Any one can hear a recitation, but not every one can think correctly, to observe accurately, and judge wisely. In fact, the chief benefit of any teacher is secured when he teaches the child to educate himself, to defy authority when it comes between him and truth, to take as little as possible for granted, and to resist his impressions until they are proved to be right. Whatever favors self-reliance, encourages accurate observation and exact thinking, helps to form a man.

Relative Value of Studies.—A few years ago the school committee of this town expressed their conviction that too much time was spent in the study of arithmetic. Our books are too extensive and too difficult, so that the principles are mastered, and the scholar has learned them, but when with the ordinary business of life, it is hardly worth while to go on the details of that which is to form no part of the occupation.

practical energies." May it not be because we attempt to teach too much and teach it imperfectly, that when men go from school to business they construct their own rules, and from their experience learn accuracy and dispatch? It has long been noticed that even those who excel in the study of arithmetic in school do not make the wisest men, nor are they more capable of transacting business than other men.

I am convinced that with better books and a wise arrangement of studies we might save a part of the time now spent on arithmetic, and employ it in learning the laws of health, in improving our methods of reading, and in acquiring a better knowledge of our language.

Health is the essential condition of successful labor. Yet few know how to obtain and preserve a sound and vigorous state of the body,—how to make it an efficient instrument of the mind. And none will pretend that the study of physiology is more difficult than that of arithmetic.

It is a common remark that good readers are scarce. How few even of those who read in public can secure the attention of their hearers by a clear appreciation of the ideas, and by a distinct enunciation of the words. Good reading requires a much larger amount of time than is usually given to it in school. Children know that they cannot recite a lesson in geography or arithmetic without study; but imagine that because they can repeat the words singly they can express their meaning, and therefore take little pains in preparation. The teacher needs time for a thorough drill.

The same is true of grammar and composition. All men have occasion to express their thoughts, and in this country, perhaps, more than elsewhere, the power of correct and vigorous expression is indispensable. Nowhere else is influence so easily gained by ready utterance, and by the ability to communicate with the public by the pen. Where families are so widely scattered, and business relations are so extensive and important, every man should be able to write clearly and forcibly, so that the words chosen to express his thoughts should be the best words and placed in the right order.

Moreover, we want to create a taste for reading, a love of knowledge, so that the rich and varied literature with which the English language abounds, shall attract and fix the attention of our young men. This can be done only by enabling them to read intelligently and easily. Then they will love to read something better than newspapers and the least valuable books. The reading that will make them useful men will not be mathematical, but historical and miscellaneous,—books treating of their respective occupations or of general literature.

It may be doubted whether anything is gained in this direction by putting the grammar into the hands of young children. They cannot be expected to understand the philosophy of language, its comprehensive

generalizations, until they know something of the language itself, and have learned to express their ideas with facility. Before this time they learn little from the study of grammar, because its technical terms do not correspond to their thoughts, and convey no information which they can appreciate. A judicious teacher, by combining the names of objects, and words expressive of action, and adding from time to time modifying words as would naturally suggest themselves, would enable them to understand the mysteries of written language. Nor need the "composition" be so formidable as they usually consider it. Let them write in the natural order, and write of what they know, of things they have seen, of places they have visited, of those familiar objects that come under their daily observation.

Superintendent.—JOHN M. MERRICK.

MILTON.

But the committee do not propose to speak of the several details. They wish to offer some considerations, which they think of value both to the teachers and to the citizens of the town. Good books are indispensable. Lessons in the book must be assiduously studied. But the best teachers are those who confine themselves to the book in conducting their recitations, and whose own minds are directed directly on the minds of their pupils. Where history is taught effectively, there the teacher makes the least use of the text-book in conducting the recitation. It is the same in arithmetic. The teacher has mastered the subject; and while he requires the pupils to learn the lesson assigned, he teaches them from the fullness of his knowledge and by the action of his mind on theirs. The lesson has freedom, interest, life. The lesson becomes a reality.

In one school, for example, the members of a class have for their subject the "Pilgrim Fathers." The teacher's mind is full of interest and enthusiasm excites them. They deal, not with words, but with facts. They understand what they are talking about. They catch the spirit of the events, and enter into the character of the remarkable men of whom they are describing. The past lives again in them. They become partakers, at least for the moment, of the martyr-spirit which brought the Pilgrims to this country, and infused into the infant colony courage for heroic deeds, and patience to endure and wait. In another school, the same lesson from the same book is recited. But it is only words that the pupils know. They have no interest in the subject. The facts are nothing to them. And so the whole thing is dull. The study gives them no information. It contributes nothing to their intellectual or moral life. And in a few days the empty, cold

words are forgotten. There is high authority for this method of teaching. In classical schools of great eminence, and under the direction of very able and accomplished teachers, we have known whole pages of ancient history to be repeated, word for word, in this way. But it would not be easy to find among the pupils subjected to this dismal process one who has learned from it anything about history, except that it is the dreariest of all studies.

What has been said of history applies with equal force to other studies. One teacher is confined to his book, and, in his dull routine, makes his pupils learn words, which lie undigested, cold and heavy on their torpid minds. Another catches the meaning and the spirit of the lesson, makes it a part of his own thought, infuses his enthusiasm into his pupils; and thus the lesson quickens their minds, enters into them as a vital force, and like wholesome food, is assimilated, and becomes a part of themselves.

We endeavor in our schools to follow the method of God's teaching; dwelling first amid the simple, elementary facts which are on a level with the child's mind and which may lead him, step by step, to wider generalizations. The course of study in our Primary Schools is not satisfactory, because it does not follow the order of nature. Children learn to use their senses first. An intelligent child is much quicker in his perceptions than a grown person. He learns more original facts, from his five senses, during his first five years, than during the sixty-five that may succeed them. This ought to be to us an indication of the divine method appointed for their early education. They are to be taught to use the senses. They should learn to observe carefully, and thus gain correct habits of observation. If, during the mild season of the year, the children belonging to our Primary Schools could spend a part of every pleasant day out of doors, learning what they might, with an intelligent teacher, about the grass, the trees, the birds and insects, their time might be much more profitably spent than it now is, and they would learn their in-door lessons more rapidly.

We appreciate the value of our Common Schools and the elementary studies which are there attended to. But the more advanced studies which are pursued in the High School are not, perhaps, so generally valued as they ought to be. "Of what use," it is asked, "is Latin or algebra, or chemistry, or astronomy, to my son or daughter, who will be obliged to work for a living?" Even these studies may be of direct, material advantage to any one. In farming, in almost every branch of mechanics, in cooking and other household labors, in commerce, whether on a large or a small scale, and in all the various pursuits which offer themselves to an enterprising young man or woman, there is not one of these studies which may not be of direct and valuable use. A knowledge of these subjects may

ermine whether a person who begins life in a sultry atmosphere remains there, or rise into a more responsible position.

Besides this matter of direct utility, there is no doubt that a good education is not a decided advantage. A culture influences with it wherever it goes. The habit of inquiry acquired by familiarity with the more advanced studies; the habit of looking at things from a scientific point of view, which is the result of philosophical and scientific studies; the habit of expression, which is acquired early and with some degree of literary refinement, are everywhere among cultivated people, and are a powerful means of securing secure attention and respect, and hold their own by a truer title, and one more universally acknowledged, than that which rests entirely on the meaner distinction of rank. And what a different thing is life to one who enters the world with a quickened, enlarged and enlightened by study, than to one who is interested in the higher branches of thought! To one who is engaged in more than a field of bodily labor and animal enjoyment, it is also the sphere of intellectual and moral satisfactions which come from exercising the powers of the mind. A good education is a questionable gift. It may only enfeeble the mind which inherits it. But a good education, to those who receive it, makes them of a finer substance of their minds, makes them of a finer and more useful character, diminishes their resources of usefulness and enjoyment, diminishes their pleasures and vicious indulgences, opens before them loftier and nobler aspirations, inspires them with better affections, and directs them to higher aims. Many a young man, richly endowed with natural talents, and destined to lead a life of conspicuous usefulness and honor, has been discouraged by the narrowness of his early education, confined to pursuits for which he had neither taste nor power, and either died prematurely, or lived a life of unhappiness, a disgrace to the community, a burden to himself, and a shame and sorrow to his friends. With a suitable education, he would have done so much good, and filled so large a sphere. It becomes every community, and all the friends of the human race, to guard against these dreadful tragedies, by bringing, as far as possible, to each of all young persons as good an education as they are capable of receiving.

For the Committee.—JOHN H. MORISON.

NEEDHAM.

We are too apt to forget the great object for which we are expending much time and means in sustaining our Public Schools.

opinion, wholly or chiefly to make grammarians or mathematicians of our children, but to make what is infinitely greater and better,—men and women. We claim to be behind no one in our appreciation, and we have almost said veneration, of our Public School system. We know that many and rich treasures have come to us as its legitimate fruit, but we believe that we have received but a bare moiety of what we might and ought to have received, if we had realized the vastness of its capabilities, and been as wise in our investments and as exacting in our returns as in our business transactions. If the whole object of life is to amass dollars and cents, and if a man's worth is commensurate with his pecuniary accumulations, then, perhaps, we can pursue no better course than our present one; but if there are other objects in life of equal, not to say greater importance, we think it possible for us to reap much greater advantages from our Public Schools than at present. If the sum total of human happiness is the great desideratum, would it not be well for us to stop and inquire if we have not done many things that we ought not to have done, and left undone many things which we ought to have done?

In point of manners we are sadly deficient, and fall far short of the less favored people of Europe. We meet and pass our acquaintances daily with little of that polite and cordial recognition which characterizes many of those foreigners who are among us, and at whose ignorance we are wont to smile. When a Frenchman meets an acquaintance, or even a stranger, he bids him good morning with an apparent heartiness, and touches or takes off his hat. We remember, in our school days, that this was one of the requirements of the teacher, and we most heartily wish that this practice, in a modified form, might be revived. How much pleasanter it would be to meet the children of our friends and neighbors who are members of our Public Schools, and receive from them a pleasant "Good morning," or a polite and graceful touch of the hat, than to have them jump upon the hinder part of our vehicle, to the imminent danger of its occupant, and to hear, perhaps, vociferated from the stentorian lungs of those who are left behind, the well remembered but vulgar "Cut, cut behind!" We ought, most certainly, to commence with our children at home, and teach them the alphabet of politeness and refinement; but much can be done in our Public Schools to aid those who are thus taught at home, and to implant in those who are not, the true principles of a graceful, manly and Christian courtesy, which shall be exemplified in all our relations in life.

We compel our children to spend a large part of their young life in the vain endeavor to comprehend the paradoxes of the grammars; in trying to remember the names of places of equal importance with the solution of the much mooted question, "Who struck Billy Patterson?" in learning to repeat the name and length of rivers they will never see; the breadth

ad depth of oceans on whose bosom they will never sail; and of mountains they will never clamber up; and yet we almost ignore the importance of teaching them the simple art of singing, and should be a joy in their childhood and a pleasure of consolation in every vicissitude and through every period of their life. We are not dissuading from the study of geography, but pointing out the inconsistency in spending so much time in that study, to the neglect of one which enters so closely into our daily life, and has so great an influence in refining, ennobling, and moulding the character of our children. Music is not, as some suppose, a mere luxury, but its germ is implanted in every human soul, and it is as much to give outward expression to it as it is to laugh when we are in joy and to weep when we are in sorrow. Everything about us is vocal. The birds sing their matins and their vespers by our window; the wind is conscious of an answering chord in the human soul. The brooks sing their sweet cadences to the sea, and the gentle zephyrs chaunt their melodies for us at eventide, through trees of evergreen, and by their enchantment to put ourselves in harmony with the whole universe. Let our children be taught to sing. Let them sing when their souls are happy.

Singing is the highest style of prayer. Let them sing, till they grow in years, and feel, as they will, "life's cares and sorrows grow heavily;" for though it may not remove the burden, it will strengthen the soul to stand up under it.

Then let them sing as they clamber up the "rugged hill of adversity;" let them sing as they go down on the "other side;" and thus become members of that happy band of singers "beyond the rainbow," the wish and prayer of your committee.

For the Committee.—L. ALLEN KINGSBURY.

QUINCY.

Primary Schools.—A growing attention has of late been paid to the Primary Schools of the town, and we have earnestly endeavored to show "this movement in the right direction" our hearty and united cooperation. It is in this department that the impressible minds of our children receive their first impressions and form their incipient habits. Here the plastic mind of the infant is moulded into forms of mental excellence. It is of peculiar importance that correct principles be given, and unexceptionable examples set. We have endeavored to place in charge of our Primary Schools (and we think we have secured) teachers of sound judgment, established character and qualifications; genial natures; blending at once firmness with gentleness, and

with decision, in order to render our school-rooms as pleasant and attractive as is compatible with earnest labor and steady, healthful toil.

We are fully satisfied ourselves that the old maxim, "Any teacher will do for a Primary School," deserves to be classed among the fallacies of former days.

We believe no Primary School is well supplied which has a second-rate teacher in charge.

A young child gains most of his early education from observation. He studies with his eyes and ears. Very few of the objects around him escape his notice. Hence it is of the first importance that the school-rooms of our youngest class of pupils be made as tasty as architectural skill can well make them. The idea which has prevailed in earlier days, and one not yet entirely banished to its appropriate shades, that almost any quiet and retired corner of the building is suitable for and well answers the purpose of a Primary School, is in our opinion, one founded in the grossest error. But we believe it of still greater importance at that tender age, when they at best hold to the little thread of life with an uncertain, infant grasp, when bodily constitutions are easily shaken, and health impaired and lost never to be regained, that particular attention be given to the ventilation of their school-rooms. And we urgently ask rooms that can be ventilated.

We believe it absolutely wrong to pack children, like sardines, into an air-tight box. We are also of the opinion that the pupils of our Primary Schools would be benefited by yet more exercise in the open air.

We are pleased to see a disposition on the part of the Primary teachers to readily comply with the wishes of the committee in regard to general and oral instruction, teaching from the ever-shifting face of Nature's works, rather than attempting to follow the dull routine of the text-book, so much in advance of their ages and capacities.

From experience in our lower schools, we are fully satisfied that the method of instruction therein is not only correct in theory, but eminently practical. Our experiments in this direction have been crowned with unexpected success.

It has been to us a matter of surprise, at the several examinations, to see the electric effect upon the pupils of these schools when the books were laid aside, and general "object lessons" were given them. It is not unusual to see the greater part of the school spring voluntarily to their feet, in their eagerness to first give the answer. But to make this method thoroughly successful, the teachers need to carefully prepare for each exercise. We were pleased to find on more than one teacher's desk, text-books for their assistance in this direction.

We are pleased to notice in these schools less of that "soulless Primary School tone" once so universal.

Considerable attention has been given to training in sounds and the correction of faulty enunciation. We would make greater effort in this direction.

It is in the Primary School (if anywhere,) that the foundation of reading is laid. The vocal organs require careful attention while they are pliant and impressible. We believe it to be more important to form a proper, natural and flowing style of reading at this age, than to correct a perverted, forced and unnatural style in years. Children at this early age are creatures of imitation and to a great extent the peculiarities of the teacher. It is, then, of great importance that the teacher look well to her own style of reading, and find her own faults rebounding upon herself, like the many who fall from the mountain-side.

High School.—The necessity, the importance and the value of this institution are day by day more apparent. Wealth, power and connections make many distinctions in society. There should be no distinction in education. It should be distributed with an equal hand. From the heavens, it should pour forth its bounteous radiance upon all. None are too high to be above its bounty, and none are too poor to be without its blessings.

Many think that the education obtained in our Grammar School (and too often in those of a lower grade,) is sufficient to bear a man to that goal where a simple headstone marks the place where he will repose. Perhaps it is. Possibly "where ignorance is bliss, 'tis folly to be wise," but such is not the belief of our year and our day.

Newton and Arkwright, Franklin and Fulton stopped not in their onward career, and the whole wide world bend before them in wonder, in gratitude and almost in adoration. Let us give our children all the advantages within our power. It is folly to say that a man of manhood and age with a small amount of book learning is not had enough to eat and to drink, yet have been unacquainted with mathematics, social science and foreign tongues. The latter may be the beasts of the field; but it should be our endeavor to lead our children to those higher and nobler walks of usefulness and knowledge which an all-wise Providence unquestionably designed for man after his own image.

The course of studies has not been materially changed. The Latin language is still required, but by application to the parent or guardian of the pupil it can be dispensed with. The study of the classics is of inestimable utility in every walk of life, and it can not be palpable to all where the advantage is felt, but few who have followed that course of educational training will ever regret it.

The committee are aware, however, that there is a feeling in the community that the studies pursued in the High School are not as practical as they should be; that they ought to be more closely confined to grammar, mathematics, book-keeping, and other matters fitting the pupils for the ordinary business of life.

The committee therefore recommend an additional department, in which the Common School branches shall be perfected, and the higher English studies pursued, and in view of that matter ask for an additional appropriation.

Very few of those who are intrusted to our care will prosecute their studies in the higher seats of learning; therefore it becomes us to whom their welfare is intrusted to make our town schools, as far as possible, a fountain from which all that knowledge flows which is needful in the business relations of life.

Gymnastics.—We are pleased to report an improvement in physical exercises during the year, more especially in the schools of higher grades. We are still more fully convinced of the value of gymnastics as practised in our schools than we were at the commencement of the year. Tired and cramped by forced and long continued positions at their desks, these exercises afford just the muscular relaxation necessary for the relief of the pupils.

A strong sympathy existing between the mind and body, both become invigorated, and the scholar goes to the duties of the session with a renewed zest. We believe that more actual work will be performed by that school where the labors of the day are interspersed with gymnastic exercises of reasonable length, than where physical drill is entirely neglected.

One of our most successful principals assures us that he finds much less difficulty in enforcing ready obedience to the school regulations since he adopted and enforced these exercises. He asserts that the scholar thereby acquires a habit of prompt obedience that he can secure as well in no other way.

The few objections which have heretofore existed on the part of some parents and scholars to this exercise, have, in our opinion, nearly subsided, and in our best regulated and disciplined schools the scholars seem to enter into them with eagerness, and with as laudable a desire to excel therein as in the intellectual exercises. We desire no better test of the inherent life and activity of a school than we can get from witnessing a general exercise in gymnastics. But the beauty of this exercise is to have it well done. Far better a few changes with perfect uniformity of action, than studied combinations of discordant movements. Their great success in the principal schools of the State has been pleasing and satisfactory in proportion to their harmony, activity and precision, especially

in the exercise of marching, which partakes somewhat of military movements.

Music.—While we think that the use of this exercise should be made subsidiary to the leading idea of intellectual development, we nevertheless wish to express our hearty concurrence with the opinion in former reports, in favor of the regular and systematic practice of music in our schools.

It may seem extravagant to many, when we speak of the importance of moral culture; and yet we believe that its tendency is to elevate the moral nature. Man is a many-sided being, and requires cultivation in all directions. To think of the intellect only, and neglect the heart; to train the mind in logic, and lose sight of sentiment—without which a man is but half a man,—this were a mistake.

We venture the assertion that a musical people cannot be bad in character, but must of necessity be quickened to the love of the beautiful, both in art and nature, and to a ready sympathy in the joys and sorrows of their fellow-creatures.

Furthermore, it is a source of rational pleasure open to all, and obtainable almost without price,—as all the really best of things usually are,—and it is the right of the people to have their minds and hearts enlarged and gratified.

Much might also be said of the practice of music as a means of improving the voice, and as facilitating the acquisition of a free and powerful vocal organ, and of a habit of concerted and sympathetic action with others; a habit worth acquisition in a democratic community.

Your committee would take this occasion to return thanks to the parents and friends of the pupils, for their generous and hearty cooperation with them during the past year, thereby rendering their labors more pleasant to the committee and profitable to the schools than otherwise might have been. We are also grateful for the interest in the welfare of the schools, as manifested by the number of visitations during the year. Yet we fear that too few parents little realize the importance of such visitations. Their influence upon the schools is almost magical. In what department of business employ assistance and then leave the workman, however diligent, out ever once examining the nature or quality of his work? No man would be satisfied with a meagre annual report of such work without once ascertaining from personal observation whether it was correct or otherwise. No thrifty business man would neglect of such neglect, even in the ordinary business of life. How important is it, then, when the welfare of your own sons and daughters is involved, when interests that cannot be measured by a pecuniary value are staked upon such labors, that you should give a thoughtful

examination to the work of those who are shaping the minds and characters of those as dear to you as your own lives! You generously appropriate all needed sums of money to the maintenance and support of your Public Schools, and even amid the severe pressure of heavy taxation, you have never once forgotten your duty to your Common Schools, or given grudgingly. In this you have done well.

Will you not give to the cause of popular education the further assistance of your occasional presence, and thereby stimulate your schools to increased activity, and encourage the teachers in their faithful devotion to their laborious calling?

School Committee.—E. GRANVILLE PRATT, HENRY BARKER, WILLIAM B. DUGGAN, WILLIAM S. MORTON, H. FARNAM SMITH.

RANDOLPH.

A serious difficulty which the committee have found working against the progress of the schools, with one or two exceptions, not only of our own town but all others visited, is the mistake of the teachers in thinking and conducting their schools on the theory that the assignment of such an amount in any book to be committed to memory, and listening to a repetition of it by each scholar, is teaching; and that the committing to memory and recital of such quantities in each book daily by the scholars, is education. Of course, when stated in this form, the proposition seems absurd and almost untrue; yet in many of our schools it will be found to-day to be the course pursued. Now the committee believe that children are eminently practical, and that while of the age of those in our Common Schools, they have nothing given them in their books which they do not find in every day life; but they must be shown, not by any telling by the author or teacher, which is merely statement, but by a leading and drawing out of their own limited observation and thought, through continued questioning, that such is the fact, before their understanding will accept it or find it of any use or benefit. To remedy this difficulty, meetings of the teachers and committee have been held in one of the school-rooms, fortnightly during the school terms, for the discussion of the present school system and the best methods of conducting schools in discipline and studies, attendance upon these meetings by the teachers being a condition of their employment. The committee have expended a small sum of money for lighting the room, and for a conveyance for the teachers in the east and south districts; and they believe it to have been very profitably spent and confidently expect much good from it.

School Committee.—W. E. JEWELL, ADONIRAM WHITE, WALES B. THAYER.

ROXBURY.

An Evening School has been organized by the board, with the statutes of the Commonwealth, which makes it the school committee to take charge of all the Public Schools placed under the immediate charge of a special committee, the employment of competent instructors to afford suitable obtaining a practical knowledge of the common branches. five hundred dollars, the same as in former years, has been to its maintenance, and we bespeak for it the active sympathy of the people.

The committee are happy to observe that truancy, hitherto one of the most potent evils against which they have had to contend, is now greatly abated under the vigorous treatment of the city marshal Hastings, and his aids. But in some of the worst cases it has been impossible to obtain conviction, in consequence of the reckless interference of parents in behalf of the offenders. Probably some of those who have to serve out a sentence for the crime of perjury before the laws can be fairly enforced.

It is, however, gratifying to know that the attempt of transferring the boys away from the Public Schools only transfers them, on conviction, to the police court, to another, in which the rules of discipline and mental improvement are quite as rigidly enforced. The Truancy School, the almshouse was re-established, under the supervision of the board, in the fall of the poor, nearly two years ago. Its object is to benefit all the boys of the class. It is under the immediate charge of the agent of the board, Ira Allen, whose long connection with the school committee makes him peculiarly qualified for the situation. An excellent teacher is employed, and the same studies are taught as in the Public Schools. The room is pleasant and comfortable. The dining-hall and sleeping quarters are kept scrupulously neat, and the large bath-tub in the hall invites the boys to their weekly ablutions. A suitable playground is fitted up for them, and inclosed by a fence, which is carried high enough so that their ambition or agility will permit them to climb. The kind and kind-hearted keeper, Mr. Young, omits nothing necessary for the reformation or comfort.

Chairman of the Board.—EDWIN RAY.

Our Grammar Schools are gradually growing out of the old type. The work to be done in them is merely to prepare scholars for the High School. Parents and teachers have come to think that this is the only object, but rather a thorough and complete instruction in the most important studies assigned to them. And certainly the chief end a

Grammar Schools should be to make our children well informed in those studies, an acquaintance with which is absolutely necessary in the management of the affairs of life, and which form the basis of all thorough education.

Much attention is given to penmanship, a most important art, the study of which it will not do to neglect or even slight in our Grammar Schools. In most of them it is taught in an admirable manner. There are, however, lower classes to be found in some of our schools where the writing-books are not very creditable. As soon as pupils are transferred from the Primary to the Grammar Schools, they should be made to review what they have learned in writing, and in all their writing exercises they should be required to follow strictly the style and form of letters which they have been taught.

Of all the branches taught in our Grammar Schools, arithmetic is perhaps taught as well as any other, and more time is probably given to teaching it; and yet some of our teachers do not produce the results to be desired. In teaching arithmetic, the object in view should be to get from the pupil an intelligent solution of the question. The teachers should not think it sufficient that the scholars repeat the process until they remember perfectly how it is performed. The essential thing is for the pupil to be taught to reason for himself, and not to rely on any rule or particular form given in the book. When this branch is taught as it should be, there will be little occasion for pupils to steal answers to be given at recitation.

It is to be feared that the attention of the principals of our Grammar Schools is too much confined to their first divisions. It seems natural that they should wish to bestow the most of their time on those who are engaged in the highest and most difficult studies, and who at the end of the year are to be qualified for admittance to the High School. They no doubt feel that their reputation, in a great measure, depends upon the success of their pupils in obtaining admission to the High School, without conditions. And yet, the principal of a Grammar School should be acquainted with every scholar. If he is confined to his own division, all of those pupils who leave before the last year of the course never come under his care. His aim should be to know the abilities and defects of every scholar in school, and, if possible, to discover the first appearance of faults, that they may be corrected, and to know whom to urge forward and whom to keep back. In order to do this, he will often be obliged to leave the instruction of his advanced pupils chiefly to his head assistant, and divide his time more equally among the several divisions.

For the Committee.—MOODY MERRILL.

The importance of the utmost care in selecting teachers for Schools, cannot be too often urged upon the attention of the Board. Here are required the most gifted minds. Here is given the first impression which may last, not only through the school life, but the whole life. The minds of these little children are in the highest degree susceptible, and the slightest influences produce lasting effects. No successful teacher in the Primary department, who has not a heart for the children, who does not give her whole soul to her duties, can do the utmost to render her school pleasant and attractive. She must be upon the alert to awaken the child's interest, ingenious in her methods to sustain it, vivacious in her manner of imparting instruction, cheerful, entering with life into all their joys, soothing their sorrows, sympathetic, bestowing praise here, chiding there, but always kind. We think we have seen schools wanting in some of these qualities. We have seen teachers whose sweetest smile and most elastic voice were absent when crossing the threshold of the school-room, but that could not be cured. Teaching to them, is a dull, monotonous routine of recitation of bread and butter, with no life or soul beyond that. Their hearts are turned before the school's progress. It is in such we see the harsh discipline resorted to. It is with such a teacher, that

"The boding tremblers learn to trace
The day's disasters in her morning face."

The teacher should have constantly in mind that the child intrusting youth to her charge, is not to learn and to repeat a daily task from the text-book. The school is not alone to cultivate the intellectual side of the child's nature. Not to touch here upon moral education, which has been so much discussed of late, and to which so much is made elsewhere, we would call attention to the moral instruction conveyed not so much by word of mouth, by homilies, by sermons, but by the constant and daily example of the teacher—by that force of mind and character which not only every teacher must exert, but which every human being must exert to a greater or evil result. It is said that by constant intercourse, the countenance acquire a resemblance, and no one could long be writing for any length of time, however marked his own features, without imperceptibly adopting some features of the original copy, or imitation of his own. So these young scholars, with their tens of so many hours in the presence of the teacher, whom they have been taught to look upon as knowing all things, and as always right and never wrong,—a perfect pattern,—must necessarily acquire something of her style.

If she is petulant, cross, scolding, evincing an inability to govern herself, deficient in good manners, in delicacy of feeling and sentiment,—so far forgetful of herself as to be unladylike, to give vent to only fitful flashes of temper,—her influence is baneful. She is not fulfilling the position of instructor of youth.

“Manners make the man.” Good breeding, gentleness, courtesy, politeness, the amenities of social life, as illustrated by the most refined and intellectual, should shine forth in the habits, behavior, conduct and deportment of every teacher. The closing of the door, the handing of a pencil, the morning salutation to the pupil, the slightest actions even, act upon the pupil and react upon the teacher. They illustrate character, are character, and must have a forming influence.

The care, then, which the teacher must exercise to make her example as an instructor of morals aid her as an instructor of the intellect, must be constant and watchful. The force of example is all-important in the formation of correct moral habits.

For the Committee.—GEO. M. HOPBS.

STOUGHTON.

The educational are the most important interests of this or any town. No other interests are comparable to them. Even the church cannot accomplish its purposes without the aid of education. Wisely, therefore, should the town legislate for its schools, and generously should it provide for their greatest efficiency. We do not yet appear to have reached the highest appreciation of our educational system, nor have we yet fully awakened to the demands made upon us by the spirit of the age or the possible future needs of our youth. We can confer no greater temporal blessing upon them than the opportunity for sound education—it is better than riches or honors, and usually the foundation of these. No committee, whether large or small, taken from the business or professional walks of life, can afford the time and labor which should be given to make our schools all that could be desired. And, indeed, this is true of a superintendent, as usually employed. The pittance the law allows is no compensation for any one who has other duties requiring his attention. It is itself little considered. And the time required is yielded only by sacrifice and *con amore*. Our opinion is, that it would be wise, in the end actually profitable, for the town to secure a superintendent who should give his whole time to the care of the schools, for, of course, an adequate compensation. One mind controlling all the schools, advising and guiding all the teachers, constantly passing from one school to another, ready to suggest the best methods of instruction in given departments, and to himself practically demonstrate the truest properties of teaching, would prove

valuable. If such a mind could be secured and retained, it would vindicate the wisdom of paying well for the services of teachers. Our schools would become our pride and joy; and Stoughton would occupy a noble position beside any town or city in the Commonwealth.

School Committee.—S. S. GIFFORD, E. G. LEACH, A. ST. JOHN CHASE.

WALPOLE.

Morals and Manners.—The congregation of individuals for official aims and results, is not an unmixed good; each individual has a special influence for good or ill; and unless by the earnest purpose and continued effort, the evils of social life are outweighed by its benefits.

Let children assemble in a school from various homes in the community where the home instruction is hallowed, and other influences are neglected; and they bring to each other teaching which partakes of their home or street education.

Here then is the existing evil in the beginning of our system which requires a remedy.

Something must be done to supplement the instruction in the schools, and to counteract the evil learned and the evil example of children whose morals and manners have been given in the street.

Parents feel this evil; and while they may be satisfied with the proficiency of their children in their studies, they are anxious that the careful and assiduous training may be undone by the exposure of children to the influence of bad example and unrestrained freedom.

How is this fear to be allayed, and a potent remedy provided for the corrective of this evil?

By teachers who realize that their vocation does not call for the cultivation of the mind merely, but also to cultivate the heart.

Originally our New England institutions of learning were founded on the Christian religion, in its principles and precepts, and this was an important branch of instruction, and this undoubtedly gave to New England ideas and society, which has enabled it to exert a powerful and healthful influence upon our whole country. Colleges were founded by religious people, and presided over by them, and they have had their measure of influence in forming the character of so large a number of our educated men.

While, then, no peculiar denominational tenets are allowed to be taught in our Common Schools, yet the grand principles of morality are not to be neglected. The law of our State requires teachers to impress upon the minds of children and youth

their care and instruction, the principles of piety, justice, and a sacred regard to truth, love to their country, and all those other virtues which are the ornament of human society and the basis upon which a republican constitution is founded. The design, then, of the law is to fit our youth to be both wise and good.

It is, therefore, a matter of legal, as well as moral obligation, that our teachers, by example and precept, endeavor to cultivate the morals and manners of those intrusted to their care.

It might be appropriate to recommend to teachers that they devote some special attention to the moral training of their pupils, not only by the force of their example, and their frown upon any indecorum, but also in some kindly and pleasant instruction upon this subject during each week, or some part of the school term, and we doubt not that there would be a marked improvement in the behavior and habits of scholars, not only, but that good morals and propriety of manners would have a marked influence upon their intellectual attainments.

School Committee.—EBER. STONE, E. G. THURBUR, W. B. SMITH.

WEST ROXBURY.

No school can prosper well without it is provided with the essential requisite, a good school-house. Such a house should be comfortable at all seasons, well ventilated and convenient, and should have pleasant surroundings, and should be, in itself and its appointments, something to attract the pupils, so that they will love to enter it and be reluctant to leave it. Next to the dwelling-house and the meeting-house, children should love the school-house, and the fond memories which cluster around these hallowed and beloved places will go with them into after-life, and be potent influences for their future good. ●

Now, when the town has provided a good school-house and a competent teacher, the parents and children must co-operate to do the rest, and the success of the school will depend, in large measure, upon the manner in which they shall perform their respective duties; and here we ought to say a few words in regard to the all-important subject of—

School Discipline.—We are too apt to think that the teacher should do all the work in this branch of education. Many parents who maintain no family government at home, expect the teacher to keep their children in perfect subjection, and by “moral suasion” alone; and they are always the first to find fault if affairs do not go on smoothly in the school, and to charge the teacher with a want of capacity for government. Now let any father or mother carefully study the development of the child’s propensities and see how much there is to restrain and correct, and the difficulties and trials of the teacher will be better understood and appre-

BOARD OF EDUCATION.

1. Here is a teacher with a disposition and ability of teaching fifty or more pupils of both sexes, and of different ages, and with dispositions as various as their complexions; the good must be assisted and encouraged, the strong and robust increased and restrained, the stupid enlightened, and the wicked reformed. All the while the recitations and studies must go on regularly, and the machinery of the school be kept in good order. When a parent contemplates the numerous and trying duties of a teacher, even under the most favorable circumstances, it will be no wonder that although it may be a "delightful task to teach the children," the discipline and general management of a school of five hundred restless, nervous, active, inquisitive and roguish children is no pleasant or agreeable task.

Rewards and Punishments.—During the past year we introduced into our High and Grammar Schools a system of periodical reports of merit and deportment, and found the plan so popular with the pupils that we extended it to the Primary Schools; and it has been very gratifying. The little ones particularly like to receive a visible token of their good conduct and proficiency. The subject of corporal punishment in school has excited much discussion in Boston and vicinity, and much has been said in its favor and against the same. While we do not believe in the abolition of it, and think that its infliction is often beneficial and salutary, we are of the opinion that, unless the case is an aggravated one, it is better to allow a few hours to elapse before its infliction, in order to give the teacher and pupil sufficient time for reflection. More leniency should thus be meted out, and the effect of the punishment is thereby rendered more salutary.

Salaries of Teachers.—While the cost of living has more than doubled during the past few years, the compensation paid to our teachers has not kept pace with it, and some of them find it difficult at the end of the year to meet their expenses. Now we ought constantly to bear in mind that no teacher, under the most favorable circumstances, can live on more than twenty years of active professional life, and that the best years of life too. The compensation, therefore, should be so fixed as to enable these faithful public servants to retire with ease and comfort, aside for sickness and the decline of life; and when we consider the peculiarly wearing nature of their occupation, the constant drain upon their moral, physical and mental forces by the routine duties of the school, it is no wonder that the teacher does not wear out sooner. We are obtaining suitable board and accommodation in our town, and it is necessary for several of our teachers to reside out of its limits, at considerable extra expense. Let us not hesitate to do what

this matter, and pay our faithful public servants the just reward of their stewardship.

Our teachers, last autumn, organized a "Teachers' Association" among themselves, and they have had several meetings for mutual consultation and improvement, during the winter. We should be glad to see the social element between teachers, pupils and parents encouraged as much as possible. We shall thus not only obey the laws of our own natures, but the laws of the State, which make it a part of our duty to promote "sincerity, good-humor, and all social affections and generous sentiments among the people." Education is not merely for the head, but for the heart and the soul, and it should be the aim of all of us to promote and to encourage among the young committed to our charge, the practice of "those virtues which are the ornament of human society, and the basis upon which a republican constitution is founded."

School Committee.—LUTHER L. WHITE, JOSEPH STEDMAN, JAMES P. WALKER, A. J. GORDON, B. F. CUTTER, B. W. PUTNAM, JAMES W. ROLLINS, ELIAS T. BOWTHORPE, L. A. TOLMAN.

WEYMOUTH.

The committee were instructed, by vote of the town, to employ a superintendent, at a salary not exceeding \$1,000 per annum. The selection of a competent person for this position was not unattended with difficulties. An offer made to a former teacher in this town was declined. After considerable inquiry, the committee made choice of a gentleman known to have been an experienced and successful teacher, and one highly recommended as a person well fitted for the performance of the duties of superintendent of our schools.

The schools at the beginning of the year had the faults which naturally result from a frequent change in the mode of their management, and from the want of one controlling and organizing mind. In many of them there was much confusion in the order in which the recitations were conducted. The system of instruction in all the schools throughout the town was far from being uniform, and a variety of text-books was made use of which were unauthorized by the standing rules of the committee. The superintendent, acting with the advice of the committee, among other things, has endeavored to remedy these deficiencies. Nor has he been wanting in success. Coming among us a stranger, both to the people and the wants of the schools, he has not sought to make any radical changes in the mode of our school instruction, but he has faithfully and efficiently discharged the duties of his office, and by his kindly suggestions to teachers and scholars, and by the generous enthusiasm imparted to them, has elevated to a considerable degree the general tone and character of our schools.

We think that it has been shown by the experience of that for the successful management of the large number of this town, a superintendent is necessary. A change, in desirable. One of the great faults in the management of our the past few years, has been the practice of passing from another, from year to year. Even an erroneous system, un- out, sometimes works less injury than a fickle and changing more may we expect that the mode of management at pr will work out substantial results, if once permanently est therefore recommend the appointment of the present supe another year, even if, in securing his services, an increased may be rendered necessary.

For the Committee.—GEO. M. REED.

School Attendance.—In mental, as in physical labor, su largely dependent upon persevering industry, consecutive labor of one hundred days is not ordinarily performed in fifty irregularity. The mechanic who is absent from his bench day, learns that such absence implies a discontinuance of pr ter and mind, in a certain sense, move only as they are mov forces.

In the school-room success is far more dependent upon continued effort, than is ordinarily supposed. The best scho means all geniuses. Promptness, energy, unflagging indust tion of effort, and regular attendance, with only moderate ments, are sure to win laurels. That pupil only succeeds, u circumstances, who is prompt and regular in attendance. from every fifth, tenth or twentieth lesson constitutes a lo can afford—certainly not those of limited means. As well m demand compensation when absent from his employment, as whose children are irregular in attendance, to expect the usu study. A lesson omitted is a lesson lost. If the aggrega term are valuable, each one is relatively important. The considered, however, comprises only a part of the real, pract omitted lesson involves not only a loss of what might have b the knowledge and the mental discipline—but presents oth particularly when the elements of science are so closely r nected that the understanding of one presupposes a knowle For example, ignorance of the principles of fractions, with eiciency in the more advanced subjects utterly impossible. It lesson imperfectly learned or wholly omitted, a subject but p tigated, necessarily retard the progress of the pupil, to say th sad discouragement and utter failure are quite usual.

But these evils are not confined to the principal offenders. Absence not only retards the progress of the absentee, but directly and indirectly affects the whole school. The time consumed in explaining a principle of a preceding lesson, lost by absence, is so much unjustly taken from the whole class; and yet the labor must be performed to avoid constantly recurring difficulties in the future. The time of the teacher belongs to the class and not particularly to a delinquent member. A pupil thus absent is an incubus, and justice demands that he should be transferred to a lower class, where he may learn more successfully, the feelings of the parents to the contrary notwithstanding. This arrangement would be of mutual advantage, since it would prevent the unnecessary expenditure of the teacher's time in repeating previous labors and explanations, and at the same time really benefit the absentee. Premature promotions to a higher class, or retaining one in a class of superior attainments, when such a pupil is really unable to understand the principles involved and of course unqualified to proceed successfully, is rank injustice, particularly to the inferior or dull scholar.

Teachers.—The selection of a teacher, one in every respect qualified for the important and responsible position,—as far as mortals may become qualified,—is no easy matter. Good scholarship is absolutely necessary, and yet no more important than “aptness to teach.” Moral excellence is an important element in good teaching, yet every good individual does not succeed as a teacher. Teaching ability is a prerequisite of success, yet all possessing that alone are not safe guardians of the young. The good teacher is not a *one idealist*, possessed of a single thought or a single excellence, physical, mental or moral, but one combining all of these excellences to as great an extent as is possible. The teacher is a model, necessarily so, whether a desirable one or otherwise. The daguerreotypeist produces, not what he or the subject may wish, but an exact transcript of the original, combining the excellences and the defects; so, the teacher, whatever the character may be, reproduces himself or herself, the perfection of the transformation depending upon circumstances. A good teacher infuses the vital forces of a vigorous, analytical and comprehensive intellect into a whole school, in some degree at least, leaving an impress not easily effaced. The influence of such must be felt, when clearness of perception, versatility of talent, energy and general efficiency are combined. “As is the teacher, so will the pupils be,” is a maxim that contains more important truth than elegance of expression. A phlegmatic teacher is soon surrounded by a comparatively inert school, while one from whose countenance the internal fire of intellect is constantly emanating, soon reproduces himself, soon creating, so to speak, a new order of beings. He who fails to control his own emotions and temper, as certainly fails to control his pupils. If the teacher “scatters,” fails in system, his or her pupils will be loose in their

from sad experience that the labor of "*unlearning*" is no trifling task ; that it is far more difficult to eradicate the tangled and matted roots of false ideas, than to sow the seeds of truth. Erroneous views, imbibed in this peculiarly receptive period, are like seed deposited in a fertile soil, springing up vigorously and soon monopolizing the whole.

If to the considerations already adduced, we add the fact that but few of the mass of pupils ever enter the High Schools, and many, if they enter the Grammar department, do not complete the course, we have abundant reasons for care in the selection of teachers for these grades.

Co-Operation of Parents.—In a certain sense, at least, the teacher is an agent, acting instead of the parents, the parents having the superior interests. The teacher may be controlled by financial considerations, having more reference to appearances and to personal interests than to real progress—mental and moral culture,—while the parent is the party more immediately affected ; the one having the most vital interests, contributing freely for the support of the Public Schools. The success of these schools is success in society in general and in the families of the patrons in particular, while a failure detracts from the public good and involves a useless expenditure of public and private funds. The schools constitute an inheritance, the personal wealth of the common people, suggesting the idea of a special regard, an incentive to foster them with a commendable tenderness. These relations involve the idea of a positive duty and privilege to visit these schools as frequently as circumstances will permit, carefully noting their methods of instruction, their management, scrutinizing the labors of the teachers as carefully as the business man does those of his clerks, manifesting, at least, as much interest in the education of our children as we do in the erection and furnishing of our residences. Such visits are not only profitable to the parents, but highly satisfactory and encouraging to teachers. It is only by such visits and personal examination that parents are enabled to judge accurately of their condition and of their advantages, as a means of elevating society. They have more interests in these schools than the teachers or visitors, and if they have grievances, they may demand to be heard—after having made themselves familiar with them—but not till then. They only have a right to sit in judgment upon the management of a school who have acquainted themselves with its condition by occasional or frequent visits. Such visits often have a marked effect in removing prejudices and objections, since some of these are imaginary. Again, both the teachers and pupils have a direct claim upon the parents for personal visits, sympathy and co-operation. If they are seldom or never seen in the school-room, while they frequent places of amusement, it is reasonable to infer that such parents have but little interest in the education of their children, and that they attach but little importance to the schools. Such inferences are unavoidable, unless it is supposed

men cannot be found to give their time to this duty. Other callings insure better rewards; and other pursuits are too engrossing to allow much time for visiting the schools, and for conference with parents and teachers. And we see no prospect of any change in the future. Would it not be well, then, to inquire if some plan cannot be adopted to meet this want? Instead of the occasional and fitful supervision, which under the present system is all that can be bestowed, can there not be substituted a constant oversight? one that shall weekly or daily if need be, engage in the work of lifting up and efficiently maintaining our schools? We think this can be attained only by conferring the active supervision upon a person chosen expressly for the purpose. Without elaborating our views upon this topic, for want of time, we content ourselves with simply recommending, that the town choose or appoint a superintendent of the Public Schools.

School Committee.—JOHN DWIGHT, JOS. B. GEROULD, A. SUMNER DEANE.

BRISTOL COUNTY.

ACUSHNET.

School-Houses—Another subject to which we wish to call your attention is that of the school-houses, and hope it will receive from you that consideration which its importance demands.

It seems to have been overlooked that the school-house as well as our dwellings ought to possess attractions for our children; and consequently while many have built new and expensive dwellings, or remodelled the old ones, and embellished them with things that make home pleasant and delightful, the school-house has been allowed to remain nearly as it was when occupied by a former generation.

Make your school-houses spacious, comfortable, and convenient—beautify them as you would your dwellings, if you wish to make favorable impressions upon your children with regard to the value you attach to the institution of the Public Schools.

School Committee.—F. W. WING, GEORGE P. MORSE, RICHARD DAVIS.

ATTLEBOROUGH.

In previous reports, we might almost say from time immemorial, we have advocated the abolition of the district system. We are not to repeat the considerations which we have urged on former occasions, but we will

most important truths. Why should not a somewhat critical knowledge of our vernacular language be considered indispensable to all who have the ability and opportunity to acquire it? And yet few, very few indeed of our boys pretend to make grammar one of the principal branches of their course of study. We deplore this tendency as an evil which calls for immediate reform. Analysis, parsing and scanning of the works of standard authors, discipline the mind as effectually as does mathematical reasoning and conclusion. Surely is it not as important that a communication in writing should be faultless in orthography, etymology and syntax—expressing neither too little nor too much, as that the arithmetical calculations therein be correct? Besides, cultivating a grammatical taste enables one to discover beauties of thought and mode of expression, and inclines to the enlargement of the boundaries of knowledge indefinitely. We are strongly impressed with the thought that this neglect calls upon parents and teachers for a prompt remedy, for in most of the Public Schools in this town the study of grammar has reached low-water mark. Education—what is it? We conceive that he has a well educated mind whose passions and aspirations are regulated and guided in the proper channels of thought and action, and whose moral and intellectual powers are cultivated and developed in harmonious proportion. We conceive it to be the object of Public Schools to supply the elementary training—in conjunction with home influences—necessary to acquire this all-important accomplishment. Is not such a consummation worthy of patient and persistent effort and many sacrifices? How otherwise can it be attained than by study, application, reflection and investigation? Is it not as true of the brain as of the muscle that alternate exercise and rest give to it a power not acquired in any other manner? If it be true that they who think much will be more likely to think correctly and profoundly, than they whose minds have not been subjected to rigid study or continuous thought; will not they who think correctly and deeply, be more useful in their day and generation than those whose trifling minds never penetrate to the substratum of principle underlying all mental or physical phenomena? Cannot much that is elevating be impressed upon the average human mind by early and judicious training? External circumstances do something. Teachers and schools much more—but parents and home influences do—or should do—most in accomplishing this desirable result.

School Committee.—WALTER D. NICHOLS, O. E. FRENCH, ALBERT E. DEAN.

DARTMOUTH.

While we assume that all will agree with us that there must be, to insure success, a respectable degree of order in our schools we know that there is a vast difference of opinion as to how it shall be attained. The

idea seems to be entertained by many, though upon their opinions we cannot imagine, that a school—a variety of elements—can be ruled perfectly and corporal punishment, if not all other modes, should school-room.

Many beautiful theories are advanced, showing rule and reduce to perfect harmony the most discordant. All this is, doubtless, beautiful in theory, but sadly in practice.

There seems to be a strong tide of opinion setting in of all punishment for the misdemeanors of the school. We see that the results of the experiment, so far as it goes, are not satisfactory even to its advocates.

We often find in the newspapers of the day a story that tells of an unruly boy who has been whipped out of a turbulent school that has been reduced to the state of anarchy; the object of which is, no doubt, to show that no other power ought or need be used by parents or teachers. And yet we find, perhaps in another column, a story of a "good boy" who rules the "old folks," and not without success. We are tempted to blame the young for being what we strive to make them.

We do not advocate a return to the old system with an iron rule—of never indulging them; of never lengthening from us; of never sympathizing with them in their play, their joys or their sorrows. It is a sad thing to see children who respect us either as parents or teachers; but is it not more sad to see them who do not respect us? and while tyrannical rule is not a greater mistake being made on the other hand.

We occasionally hear those who reluctantly admit that corporal punishment mournfully regret that we have no point where it can be wholly dispensed with. But we believe the opinion that another race must be created before we can do without it is a necessity in certain cases.

The Supreme Being—who is Love—uses the rod to correct his erring children. And physical pain is often employed in the laws of nature. And who will presume to say that we should not use the rod to bring the careless and wayward back to the path of duty?

We do not advocate tyranny in teachers; on the contrary we urge them to govern in the mildest possible manner when all other proper means have failed. We would have them in view of the moral responsibility of their position, strive to win the love of their pupils, that they strive unceasingly to win the love of their pupils, that to this end they give them their sympathy in all their trials.

plays, in their moral and physical as well as intellectual welfare, and show them their great aim is to do them good.

School Committee.—FRANCIS W. MASON, JOHN GREY, ROBERT P. GIFFORD.

DIGHTON.

We would prefer to exclude all coercive measures from the school-room, leaving its order to establish itself, as the result of a manifest interest and application on the part of the teacher, and a sense of duty and reciprocal attachment on the part of the pupils. But this is hardly practicable so long as many of the pupils are so ill governed, or not at all governed, at home. Our schools are not composed on any principle of selection. They contain elements of every variety of home culture, and their highest interest, as well as the life-long welfare of some that compose them, would seem to demand that when Christian love, and moral suasion, and long-suffering patience have proved unavailing, in the case of any offender against established order, inflexible law must intervene and employ its instruments of coercion. But whatever means are employed, the teacher should be careful lest he lower the moral tone of his school, by securing only a mere inert, passive conformity to his commands, other than a cheerful and willing co-operation with his efforts, in accomplishing the proposed end of the discipline.

In speaking of the moral tone of the school-room, the general subject of morality is at once suggested. The laws of this Commonwealth require good behavior to be taught in all our Public Schools. Sectarianism being proscribed, teachers are liable to go to the opposite extreme, and teach nothing that is not of a literary character. The teachers should ever bear in mind that their duties, in this respect, extend much farther. They should endeavor to form and promote habits of punctuality and regularity, of diligence and love of labor, of economy, of perseverance, of forethought, of kindness and courtesy, of mercy to inferior animals, of forgiveness of injuries, of charitableness, of justice and respect for property, of respect for superiors, of submission to the authority of laws, of truth, of reverence for God and obedience to his laws. If it were possible to give a child a thorough moral training without cultivating his intellect, it would be far better than to train the intellect and leave the moral nature uncared for. As knowledge is power, the more of it one has, the more power for evil he possesses, if that knowledge is wrongly directed.

School Committee.—GEORGE E. GOODING, C. W. TURNER.

FAIRHAVEN.

Without seeming to actively co-operate, parents may do much in maintaining good order and discipline. Do not accept all just criticisms; better dismiss the child with an admonition to better conduct, and if the complaint seem well founded, visit the school to learn from him the true state of the case and adjust it wisely. So conducting as to impress the child with a kindly regard for his teacher, and the idea that his authority and the discipline are to be maintained. Such an interview between a teacher and a parent feeling aggrieved, must almost surely result in a mutual understanding, and in securing the good of the child and the school.

We say, therefore, visit the schools frequently, and become acquainted personally with the teacher and his methods of governing. Encourage him by showing an interest in the progress of his own children, and the advancement of the school in general. The visits of parents and citizens may prove quite as beneficial to the committee. The pupils after a time become accustomed to the entrance of parents or neighbors into the school-room, and they are looked upon as a part of the routine of the school. It is of their special interest in the welfare of the school or its members of it.

The disadvantages of a somewhat unequal distribution of money are unavoidable where the inhabitants are much scattered, where the schools must be multiplied in order to accommodate the population; but where the schools are more removed from the centre of population; but in this town and the location of its people are such, we believe that of reducing the number of schools and of a more economical distribution of the money among them, without injustice to any one, is a purpose your committee think the present district system should be abolished or the town re-districted, and we earnestly press this upon your consideration. We do not see how the condition of the schools can be advanced to that degree of excellence which the education of your children demand, without a much larger appropriation than we ask for, or the adoption of a system which shall enable us to utilize what is every year so liberally voted. The school term cannot be made longer, nor can we surely retain our best teachers, or keep in place of the indifferent.

School Committee.—ISAAC FAIRCHILD, CHARLES DREW.

FALL RIVER.

Grammar Schools.—Grammar Schools occupy an important position in the system of public instruction. Many scholars never go

before leaving school altogether, for the active duties of life. Consequently these schools should be conducted so as to give pupils as much practical knowledge as possible. For the accomplishment of this desirable object much more depends upon the mode of instruction, than upon the course of study pursued or the text-books prescribed. So far as I can judge, the course of study adopted for our Grammar Schools is as good as any in use; and the schools themselves will compare favorably with others of the same grade in the cities which I have visited the past year.

Nevertheless, I believe it to be a fact, that too many young people leave our Public Schools having more knowledge of books and recitations than of useful things and the plain realities of life. Memory is cultivated more than the reasoning powers, and attention is given too much to scholastic formalities, when it should be directed to the beauties of nature. This is true not only of the higher, but also of the lower grades of schools.

Occasional experimental lectures on the leading principles of the sciences, in their connection with the useful arts, would be very instructive and profitable in our Grammar Schools, especially to those who do not go to the High School. Many things in Natural Philosophy may be illustrated so as to be well understood, without the use of text-books. The book of nature is far more interesting to the young than any school-book. The kite and the cloud taught Dr. Franklin more of the nature of electricity than was known to mankind at that time.

Declamation and compositions are not taught to the extent they should be in our Grammar Schools. It may be said by some, that the pupils in these schools are not old enough to construct sentences to any great extent, much less to write either essays or disquisitions on specified themes. If they are not old enough, when will they be? The average age of all the students now in Harvard College, when they entered, was less than eighteen years, notwithstanding the high standard of admission. The average age of the pupils who entered our High School last year, was fifteen years seven and a three-fourths months. I know of no city in the State, in which the scholars, who entered the High School last year, were as old on an average, as those who entered our High School. It appears to me that persons fifteen years of age are old enough to practise English composition much more than is customary in our Grammar Schools.

Declamation, rightly taught, cultivates expression, a very desirable attainment in itself, and a valuable aid to good reading. As to want of time for these exercises in connection with other prescribed studies, my views will be given under the head of teaching in general. I am fully aware that there is a great variety of opinions not only as to the classification of pupils, and the best methods of teaching, but also as to the true order of study in Public Schools. All that can reasonably be expected of me is a presentation of my own opinions on these topics.

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High School.—The utility and importance of a High School in cities and large towns, are generally acknowledged; and there is a law of the State requiring every town of more than a hundred families, to establish and maintain a High School. These schools are virtually the colleges of the population, and are conducted on broad and generous principles, by a liberal and extended cultivation of mind and heart, and are instruments in promoting Christian civilization; and assist in the training of the youth, with the tenderest care, by lending assistance tending towards perfection. To secure the best results, the school should be well constituted, organized and conducted so as to win popular approval, so they fall far short of fulfilling their design, and lose the sympathy and support which they need to make them effective instrumentalities in moulding the public mind for the fulfilment of the duties of a democratic republic.

The value of a High School, then, depends in a great measure on the interest which the public take in it as an educational institution. This interest, in turn, depends upon the nature and character of the school itself. When by its inherent virtue, shining forth in the attainments of its scholars, it demands public attention, then and not till then, it will receive a court, aside from all pecuniary considerations; and the children will duly appreciate the great privilege of attending such a school. When a High School is what it ought to be in its character and aims, then it becomes both useful and popular. Wherever a High School fails to secure the respect and attention which it deserves in the system of popular education, the fault is in the school or the public is in fault. It would be unreasonable to expect a school of any sort could be established and maintained without the support of the public. Nevertheless, a High School is a school that even the most captious cavillers would acknowledge to be of commanding virtues. As soon as it could be made a subject of no shadow of a doubt, that the graduates of such a school were well prepared for the educational world, including literature, the sciences, the belles-lettres, and that young men were as well prepared for the law as in any seminary, then the citizens as a whole, would be gained, but much lost, by sending the youth to a school of instruction, either to Public or Private Schools.

A High School adapted to our condition and wants should be neither a classical nor exclusively a scientific institution, but one in which our young people might fit for college, for the professions, and for the useful arts; in other words, a school

might receive normal instruction in branches leading legitimately to the learned professions, and to responsible positions requiring a knowledge of the arts and sciences; and in which young ladies might derive, from polite literature and other refining influences, all the accomplishments of women of practical culture and Christian worth.

Adult Evening Schools.—In accordance with a suggestion in my first report, and in compliance with a law of the State, the school committee passed a vote that no scholars under fifteen years of age should be permitted to attend the Evening Schools. The influence of this action of the committee was very beneficial to the Evening Schools, the past winter, which were opened in Armory Hall, on Bedford Street, and in National Hall, on South Main Street. At the commencement, both halls were crowded; but after the lapse of a few weeks there was ample room for all in attendance. The whole number of scholars in both schools was three hundred and seventy-three; the average attendance in Armory Hall was one hundred and thirty-seven,—the number belonging, two hundred and twenty-five. The average attendance in National Hall was eighty-one,—whole number one hundred and forty-eight.

These schools were in session sixteen weeks. From the registers, it appears that the school in National Hall was visited eight times by the superintendent, and three times by different members of the committee; and that the other school was visited the same number of times by the committee, and “frequently” by the superintendent.

Our citizens may feel assured that the public money was not unprofitably spent the past winter for the support of the adult Evening Schools.

Superintendent.—DANIEL W. STEVENS.

NEW BEDFORD.

Government.—The government of the school-room has generally been considered an excellent illustration on a small scale of limited monarchy; but we have had now, for about two years, in the Fifth Street Grammar School, in the principal's room, a school that is self-governing, a little model republic and a very good model too. The girls and boys make their own laws and choose their own officers to execute them, and we challenge the State to produce a better governed school, whether considered in its general deportment, the work done, or the character evolved.

Howland Grammar School Association.—About two years ago Master Woodward, a boy in humble life in the Middle Street Grammar School, conceived the idea of forming a society for the prevention of profanity and vulgarity. The idea was well received by his teachers and comrades, and also by the superintendent, and a society has been organized called the “Howland Grammar School Association,” in honor of Mrs. Rachel

Howland, who had exhibited a deep interest in the undertaking, given substantial proofs of her desire for its success. On July last, this society held a public meeting in the largest hall in the city, when addresses were made by several of its own members, Mrs. Howland and other friends of the enterprise. The society gave a collation in Pierian Hall, to which they invited the government, the school board, the teachers of the Grammar School, and other friends. We hail this movement as being one in the right. A society of this kind formed by boys, among themselves, and managed by themselves, as it is, is a precursor of great things. Boys at this age are peculiarly exposed to temptation, more easily led astray than at any other time in life; and a society which will save them from the foolish, ungentlemanly and wicked habits of idleness, immorality and vulgarity, will do more than save them from the temptations of the world; it will save them from evils to which these sins lead; and as in the case of wrong one seldom stops with the commission of a single wrong, but goes on to work of reformation, if these boys are properly encouraged, they will stop until they have developed manly, Christian character, and secured their own salvation. We commend their undertaking to the sympathy and encouragement of the whole community.

Teachers' Salaries.—We bear cheerful testimony to the devotion, industry, and the faithfulness with which our teachers, as well as the parents themselves, perform their duties. Even the parents themselves take so much interest in the education of their children, as do the teachers. We know of no class in the community who perform service that demands so much time, labor and money of one's self for, so much tact, talent and ability to properly direct, which so severely taxes the strength and energy of the person. They are so poorly paid as that of Public School teachers. It is not only engaged in school but about six hours a day for five days in the week in their classes, but this is by no means all nor the principal part of their time. The successful teacher must ever be a learner, and must acquaint themselves with the progress in literature, in science, in art. They should make themselves familiar with the new systems of teaching, and be able to decide on the best. A broad and liberal education is essential to the thorough teacher, and so far as this is gained, it requires money to buy them and time for their study. The salaries of our lady teachers have been increased the present year about fifteen per cent., while the salaries of the gentleman teachers have remained substantially the same. It must be apparent to every tax-payer who supports a family, that our gentlemen teachers cannot, without support a wife and children as a teacher's family should. No one renders a better service to the community than the

is a shame to us if his income from his teaching does not yield him an adequate support for his family. Not only should the teacher be paid a salary sufficient to meet current needs, but the salary should be sufficient to enable him to lay by something for old age, when he cannot teach. The duties of the teacher are as difficult of performance, their labors are as important and useful, as those of any class of persons in any department of life, and the same financial inducements should be held out to them, and the same rewards attend their faithful efforts, as to other callings in life. While he feeds the minds of our children, let us see to it that he has the means of keeping the wolf from his own door.

Chairman.—CHARLES ALMY.

The Primary Schools.—In last year's report I spoke in warm commendation of the reformation that has taken place of late in the management of this grade of schools, and expressed my purpose to request of the incoming board the means to fit up two of our primary rooms, in different parts of the city, with the requisite appurtenances for the practical application of the new methods, so that I might be able to give experimental lectures to the teachers of this grade.

Your board, with kindly promptness, seconded my desires; and the rooms, one in the Bush Street, the other in the Cedar Street school-house, were furnished accordingly. Before they were in readiness, I gave a series of lectures in the school committee room on the principles of the new system as distinguished from the old, and then transferred my efforts to the rooms in question.

I have not anticipated nor desired a sudden revolution in the management of our Primary Schools. Any such changes would be likely to be only flashy, superficial applications of the new system, that would do more harm than good. The teachers have first to understand intelligently and thoroughly the principles involved in this reform. They have then to feel their way by experiment, into the full and successful practical application of them, gradually substituting the new methods for the old. And what is equally material, and not within their power to compass, their school must be reorganized so that there shall be no more than two classes in each room.

These prerequisites will necessitate slow progress. In my own experimental lectures, I have to make haste slowly, practising as I must with little children, to whom what I seek to accomplish is strange and untried; and if I succeed in impressing on the minds of the teachers at each lecture, a single point of the multitude that pertain to the subject, I feel that I have done all that can reasonably be expected. Much ground, therefore, still remains to be passed over. But even thus far, I am encouraged to believe that real progress has been made towards the

erfected results at which I am aiming. The
 their cordial attention. The best spirit is pr
 one of them the subject is not new; and the
 heartily the systematic consideration of what
 interest in, and made a partial application of.
 freed themselves from the trammels of the cor
 with intelligent resolution are steadily and a
 nodes of teaching into conformity with the ne
 hink that the teachers of this grade, as a bod
 he following propositions as the comprehensive

1. The methods of teaching which have p
 Primary Schools are entirely false; because
 which nature develops the mind of a child. It
 herefore, that a Primary teacher should compr
 outhful mind, and its mode of operation.

2. The faculties through which nature first d
 are the perceptions. Therefore in teaching l
 agencies of instruction must in all cases be
 Whatever cannot be thus taught is beyond t
 anything otherwise is to retard their develop
 nvariably to be appealed to through the senses.
 precede its abstract symbol, the word; and n
 without associating sound with sense.

3. Eye, ear and hand should all be syst
 habits of accurate observation may be formed.
 o discriminate with precision between differen
 different forms, sizes, colors, appearances; th
 measures of weight and resistance, and those
 he scope of the sense of touch. These are
 education.

4. The body must sacredly be cared for if
 Therefore, no constrained positions must be
 exercises must be judiciously interspersed amo
 muscle as well as mind.

5. To keep a small child sitting still with u
 upon nature, and an individual and public wron
 must have something given it to do; some let
 ure to imitate; anything except being assign
 and told to study it.

6. The minds of little children tire speedi
 fifteen minutes is as long as any recitation
 Primary School.

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nal disadvantage in the other schools, or detriment to the boys of tender age who answer to the same disadvantage, the intellectual progress of such a school is hindered. Necessarily subdivided into many classes, the material is wanting to the possibility of rapid progress; attention can be bestowed on each individual only under ordinary circumstances; while in addition, the school is interposing those vexatious interruptions to the study which would be inevitable were they destroyed. The advantages of the school to the peace, order, and progress of the other schools, are of a marked and vital character. This is a rapid statement of the organization of the school, and the good effects of its formation on the other schools. As said, vigilant circumspection prevents or prevents the evils which have been feared. And let us congratulate ourselves on the existence of such a school in a community like this. It is to allay the anxieties of many parents as to the education of their children, and to bring in and keep in our Public Schools those whose thoughtful home training makes them a most useful element. Just here occurs the point,—the only point having a show of validity,—wherein the Public Schools might come into disrepute with a large and increasing number of private schools. Their advantages, such will admit, are great; but their disadvantages are fearful. It is questionable whether the Public Schools are subjected to them; and as for placing pure-moral training as the formative period of their lives, in the comparison of speech and behavior, it is not to be thought of. To repeat it, this is the only forcible argument that can be made in favor of Public Schools; and it is so often urged that it needs candid and serious consideration. On general principles, I believe heartily in the democracy of education. I believe that the training for a boy, here in America, to fit him for the world, is to empty him of all narrow, exclusive and selfish ideas, and to put him healthfully into the roadways of his life,—to teach him how to meet those who hail from every class of the community on the common plane of manly and generous endeavor in the promiscuous public of a Common School. Among the advantages to be gained by the girls of a Common School, is the opportunity to realize the advantages of the Common School, the impartial democracy of universal education, the ennobling characteristics of human nature, the truth, that it is very frequently contrasted with the selfishness of personal worth, that separates between the

believe that such a charge as this against the practical influence of Schools, takes the question out of the range of general principle, and that those parents who honestly prefer it have a claim to our understanding and respectful attention. This admission, I am aware, will be met by two replies, from two very different points of sight. On the one hand, it will be said that human nature is human nature everywhere, and that the moral distinctions supposed to exist between Public and Private Schools are less real than might at first appear; that Public Schools are select only because various individuals, following out their own preferences, select to send their children there; and therefore one is no more sure of bettering the moral surroundings of his children, by sending them from a Public to a Private School. Moral dangers pertain to every kind of school. The difference will be found to be limited entirely to the coarseness of the impurities in the one case, and the refinement of them in the other. And moralists are by no means decided that the influence of these aspects of impurity is, on the whole, the most pernicious. On the other hand, it will be bluffly asserted that all squeamishness on this point is ridiculous. Children, and especially boys, must be exposed to the world sooner or later, and it is better for them to get broken in to it at school than to meet all sorts of children at school. It's all the better for them.

Against this latter reasoning,—very common I am sorry to say,—I make a dignified protest. He who consciously subjects his child to such a moral exposure, flies in the face of the claims of humanity, and of the God who made it. The Saviour taught us to pray, "Lead us not into temptation." And if there be less moral exposure in a Private than in a Public School, by all means let the children attend Private Schools.

It is the question; and without drawing any invidious distinctions, I make these brief references to this important subject by expressing my gratification that the Ungraded School, established in part for the purpose of freeing our schools of those elements whose influence might be injurious, has proved, in this and other regards, so signal a success. We are being forced upon elaborate pleas to vindicate Common Schools, which is practically saying to our citizens, Come, one and all, send your children to the Public Schools. We will employ as teachers only those whose characters are unexceptional, and enjoin them to maintain a diligent supervision of the moral condition of their schools, and to protect from the influences every child committed to their charge. And whenever a teacher, through speech or behavior, exhibit traits that may imperil the moral condition of his school, he shall be removed to a more appropriate school. Every form of vulgarity and every injurious form of coarseness shall be and unremittingly discountenanced; and truth, purity and

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ement as steadily praised, illustrated and supported in our Public Schools.

Howland Grammar School Association.—The chairman of the Board has expressed his views in terms of warm commendation of this organization, and the great interest and importance of the subject will justify some further notice. In the year 1835, the brother of the writer was master of the Howland Grammar School, in South Boston. It stood in what was then a coarse and not very refined neighborhood, and many of the boys were profane. Anxious for a reform in this particular, he endeavored to lead some of the purer and manlier among the boys to form a society for the suppression of the vice. The plan succeeded. They became a power in the school; and, finally, whoever was guilty of profanity or immorality was at once rebuked by the society.

One day the noble Amos Lawrence, one of his habitues, was passing the school at recess time, when he stopped and said to one of the boys near by, "Why is it that when I go to the other Grammar Schools when the boys are out, I hear a great deal of profanity and vulgarity; but here, where I hear more perhaps than anywhere else, I hear little or nothing of it?" Oh, sir," the boy replied, "we have a society pledged to suppress it."

Deeply interested, Mr. Lawrence inquired more closely into the matter, and the next day the master received a contribution from him, inclosing fifty dollars towards the library of the school. He remembered it on subsequent occasions in the same manner. The Lawrence School was formed out of the Hawes district. The Hawes School Society in a new and more complete building, and the name of Mr. Lawrence, who gave to it between the time of his death nearly two thousand dollars.

It has long been one of the cherished purposes of the Board, if circumstances would allow it, to repeat in some part of the city this successful and most useful experiment. And it was here, when I casually discovered that a similar society was already existing in that school. It was small in numbers, but it suggested the immediate possibility of a more extensive and greater results.

The Association called itself "The Howland Grammar School Association for the Suppression of Profanity and Vulgarity," taking the name of the city who, at the first intimation to her of the existence of the society, had hastened to show her heartfelt interest in its success.

The remark sometimes carelessly escaping the lips of a teacher, that "he deserves a good whipping," betrays an offender, that he entirely mistakes the object of school discipline.

I am disposed to go farther than these generalities. On the grounds, both in theory and practice, for believing that the rod in schools is a dangerous instrumentality in a modern age, that it need be resorted to at most only on rare occasions, and should set our faces steadily towards its final abolishment.

For, in the first place, no man in his senses favors recourses to the rod, on any theory of its abstract utility. On the contrary, it is generally laid down, even by its most strenuous advocates, that it should be administered for ordinary delinquencies, never until moral influences have first been exhausted, and never unless it be made to operate on the moral sensibilities as well as on the physical. Now let these theories be fairly carried out, and nine-tenths of the corporal punishment in our schools would instantly cease.

Again, let us examine closely into the validity of the conditions, viz.: that the rod is never to be resorted to unless it be made to operate on the moral sensibilities as well as on the physical. I doubt the fact of a connection of any sort between a blow on the back and the moral sensibilities. The logic that would be drawn from the nature of the case, be exceedingly lame. There is no admittance to the higher nature that can be made to operate directly by applying the oil of birch to their hinges. As soon as then the use of the rod is at once estopped, according to the conditions in any and every case.

Again, it is an argument of the defenders of the rod, that if school discipline were what it should be, there would be no need of the rod in our schools.

This is doubtless very true. But the reflection springs into the mind of the philanthropist, that the class of homes from which the most disorderly scholars come who are most disorderly at school, is, for the most part, in which the standard of character is degradingly low; in which selfishness and passion are prime ministers; coarseness of speech and conduct, the rule of conduct, and blows and curses perhaps, are a part of the daily hours. Therefore the finer sensibilities of the children are blunted or imbruted; and such children, surely, who would be of no glance to be governable only by brute force, are of a class to whom it should be made to feel it least. Instead of reproducing the principles and methods of government that have already failed with them, we should be careful to surround them with an atmosphere of kindness and sympathy; we should set the genial, winning régime of the school-room in the strongest possible contrast with the coarse brute force of the home.

homes; we should make them feel that they are thought of and cared for; instead of stern reprehension, enforced by blows, they should behold the tears of our pitying grief at their perversity; they should behold in their teacher a beautiful example of the noblest type of manhood; and we should thank God if, by such means, we can get a ray of heaven's sunlight into their benighted souls.

I am glad to report that there is comparatively but little corporal punishment in the schools of New Bedford. The subject receives my constant attention, and our teachers often consult me as to their duty in regard to the conscientious scrupulousness and a heartfelt desire to practise the best methods of discipline. We are all anxious and resolute to reduce the use of the rod to a minimum, as determined by what is requisite for the correction of individual transgressors, as well as the preservation of due order and discipline in the schools.

While, in view of all our teachers, there are the illustrious examples of those who are succeeding admirably under the most adverse circumstances, without an appeal to force! Their success is due, without exception, to remarkable personal endowments. Such rare endowments, no one can be "born, not made." Yet it is possible to acquire such lofty qualities, such an impressive self-control, such refinement of feeling and intellect, and such an efflux of spiritual truth and life out of deep, living faith within, as to compensate in good part for what nature has withheld and to endow with the most persuasive power. To these acquirements and frequent triumphs I affectionately commend our teachers.

Closing, I take occasion to warn our teachers, that through their desire to avoid multiplying cases of corporal punishment, they do not fall into the habit of having recourse to practices which exert all the pernicious influences attributed to formal and acknowledged corporal punishment without any possible good effects. I refer to such acts as boxing the ears, pulling the hair, shaking the shoulders, placing in constrained and uncomfortable positions, shutting up in closets and the like. For whatever bodily pain or places in physical fear is, strictly speaking, a corporal punishment. Let us have none of these petty, dodging substitutes, under any circumstances. If the judgment and conscience say that punishment must be inflicted, let it be inflicted, and honestly and fairly. Better anything than a resort to what is in reality a confession, of the want of objective, moral power, but also of proper self-control.

On Teaching the best kind of Teaching?—It becomes my duty in my annual report, not only to give an account of the schools, but to make suggestions as I may think important to their future well-being. In compliance with that duty, I desire now to ask your attention to some thoughts that I trust you will not consider of slight value. They

concern the course of study and methods of teaching schools.

Are the existing notions of the relative values of our studies so just and true to the demands of nature and should remain precisely what they have been for a hundred years, or not more, far more, to be gained to the cause of education of those values?

This is certainly one of the most important questions which should concern educators at the present time. With a settled uneasiness that the Common School system is far from producing what is to be expected from its splendid machinery and enormous expense, it is time to be finding out if possible, what is the actual performance so little in keeping with the promise.

I am limiting the steps of my present inquiry, as will be seen, to the Grammar Schools. I do so with express and serious purpose. The Grammar Schools of the land, and not the High Schools, are those that should be the paramount objects of attention and consideration. In view of the success and worth of a Public School system of enforced education through enforced taxation, it is a sufficient justification, to prepare the children of the whole people to become as much splendid scholars, as good citizens. Good citizens are the legitimate purposes of a governmental system of education. The higher culture provided for in the higher institutions of learning, in certain relations, of inestimable value. But in the Grammar Schools that the great mass of the men and women of the country are to be fitted, so far as school instruction can prepare them, for the engagements of life. Take for illustration our own city. Every year, more than three hundred scholars enter the Grammar Schools. Yet of these only an average of seventy-five graduate of the High School, and of that seventy-five, nearly one-half drop out before the end of the second year, thus making their attainments comprise the bulk of their attainments. What a percentage of our youth, therefore, terminate their studies in the Grammar Schools, as compared with any other class of schools! In a paramount position, in very truth, that grade of school in our grand educational system; and with what intense solicitude its condition and progress be watched!

Pursuing our inquiry, I ask now, what is it that we should accomplish, as the chief object, intellectually speaking, of Common School education?

1st. To supply the mind with materials to work with. 2d. To develop, train and strengthen the mind to work by.

end to cultivate a smaller number of the faculties in manner than mathematics." And again, he says, "For me study is more utterly worthless than that of mathematics." Bernhardt writes, "Mathematics do habituate to collect, to appreciate, the attention they require is, so to speak, in a straight line." He says, "When mathematicians attempt to judge of the affairs of public or private affairs, they arrive at conclusions the most erroneous."

Pascal says, "Thus it is rare that mathematicians are observers of the human mind." And to draw on Germanical and educational authorities of the highest celebrity.

"It is a fact notorious in all schools, that minds which manifest a special aptitude for this class of abstract representations possess the feeblest power of reference to other matters." Bernhardt writes, "It is mathematics awaken the judgment, the reasoning faculty; and thus in general to an all-sided activity? We are compelled to answer, no. Goethe said, 'The cultivation afforded by mathematics is to a degree one-sided and contracted.' And Lichtenberg, of more bluntly than all, 'Under the head of mathematicians are the veriest dunderheads in existence, incapable of any thing but calculation, which requires reflection.'"

For myself, believing as I do in the existence of the mind as a unity of distinct faculties brought into mutual consciousness and common powers that serve as connecting links to the whole, "reason," as the phrase has it, that these very plain statements are perfectly true; that the faculty of numbers should by extension be nothing particularly except itself. And I think that the common sense and observation will lead us to the same conclusion. Look abroad, for instance, through the ranks of society and business life. Fasten your attention on those specially distinguished by mathematical power. Are they specially distinguished by clearness and comprehensiveness of their reasoning, their logical conclusions in other channels of mental action and in other affairs? Is there any superiority in their general manner of reasoning may fairly be attributed to the influence of their arithmetic? I dare to answer, no.

Thus it appears, both from the dicta of noted metaphysicians and the testimony of personal observation, that there is nothing in the study of arithmetic on the mind to lead us to give it pre-eminence in disciplinary instrumentality.

It remains to speak of it as a medium for supplying materials to work with. Let it be carefully borne in mind that I am not attempting to prove that this study is of no value. I am only striving to ascertain its value as compared with

and rules. Rules are gathered from practice; they are a deduction to which we come by long observation and comparison. It is, in fine, the science, the philosophy of language. The process of nature, neither individuals nor nations ever arrest. A language is spoken and poetry written before any prosody is even thought of. In short, as grammar is a science, it ought to be taught after language."

I do not hesitate to say without qualification, that the study of grammar, scientifically and methodically, anywhere below the Grammar Schools, is an absolute waste of time. It neither informs nor instructs; and it can be of little or no use even in the highest schools, unless there shall first have been a course of appropriate reading, which will have imparted some scope and freedom in the uses of words, and in the construction of sentences, and the expression of the ideas.

I ask again and pause for a reply, why are our children taught the study of grammar? Who can answer, unless it be the suggestion of Herbert Spencer, penned in a similar connection, "It has been customary to do so from time immemorial, and therefore it is done."

3. The third study in the order of relative values, is geography. It should be disposed to allow it the full place and consideration which it has been accorded to it, if only it might be properly taught. It has been wretchedly otherwise. In the first place, no text-book of geography is so exeuntially faulty than those of this study. It would be a common sense had been so coolly set aside at the start by the authorities who prepared them, as not to be regarded in the least. The most common errors in their construction are, first, beginning with generalizations that are the fruits of the ripest culture; second, a wide range of map questions, mixing up important localities and geographical features in indiscriminating questions; third, numbering the memory with a mass of dry, disconnected facts; fourth, a separate description of the climate, productions, etc., of each country; fifth, a political State on the globe, including the several United States; sixth, requiring an independent act of memory in each case; seventh, assuming that controlling climatic and other general laws had been recognized; eighth, in the instruction, the position of the various countries on the globe would instantly suggest their temperature and staple products; ninth, the useless, disintegrating details that must now be encouraged to be avoided.

4. I dismiss the next study in the order of values, spelling, simply remarking, that the orthography of our language is so arbitrary and unsystematic in relation to its pronunciation, that the only way its words must be learned mainly as an act of memory. It is a fact, however, that many of our words must have been settled by experience, that only in early

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en to some friend describing certain events the
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rl are heard in all our workshops, in the freezi
smoke, the blue of the heavens, the cooking
ids, the draught of chimneys, the manipulatio
t make up our clothing, the glass and crock
steel that is hard while iron is soft; yes, in th
rything with which we have to do; are our
hmetic and grammar exclusively, and never
igs so important to every day's intelligent actio
me, as I believe.

but it may be said, In this allotment of studie
gin for the discipline of the mind.

A few words only will suffice on that point. It
ght of absurdity to require scholars to pursue
the sake of disciplining their minds, such studi
their assumed power to effect this object, whe
ly ever to have opportunities to supply their
ce as will bring the discipline into practical us
case with the great majority of those who
ools directly into active life.

have thus examined into the relative values
ioned as belonging to a Grammar School cour

BOARD OF EDUCATION.

be assigned in it to be thoroughly learned. Our Gr^{ammar} ready thus using their histories to good advantage. I have already indicated, with sufficient accuracy, the I would give to geography, reading and spelling ; and that I would have writing carefully and constantly attended to. I copy-books only, but in various practical ways, and systematic instruction in music and drawing of indispensable complete training of the powers and senses, I close deeply interesting theme.

Superintendent.—HENRY F. HARRINGTON.

RAYNHAM.

Moral and Religious Teaching.—All educators and laymen of nonwealth are agreed that the teacher has not done enough to the pupils of a school, when he has done his best to strengthen the memory, the reason, and the imagination, the actual powers ; but that important as this work is, more important work to be done, viz. : the fit culture and development of the conscience, and of the entire moral nature.

Denominational peculiarities entirely aside, we have a common domain given to us for cultivation, which requires our most wise and strenuous efforts, and the influence of religion in all its parts, no mind of either patriot or Christian should be unappreciated. Teachers, as well as parents, should be reminded that the wise and benevolent laws of the State require that the principles of piety and morality shall be taught in all our schools. That eminent and truly candid and philosophical observer of American institutions, Alexis de Tocqueville, says : " Of all classes and parties hold morality and religion to be the maintenance of republican institutions. Despotism cannot exist without faith, but liberty cannot. How is it possible that the moral tie be not strengthened as the political tie is relaxed? and what can be done with a people who are not religious, if they be not submissive to God?"

School Committee.—WM. J. BREED, NATHAN W. SHAW, CHAUNCEY

SEEKONK.

No better way can parents show their deep interest for their children, than by often listening to their recitations.

Teachers are thus encouraged in their arduous work, and stimulated to greater diligence in their studies. B.

BOARD OF EDUCATION

usually assume, to have a good knowledge of the peculiar wants of the school. Their knowledge is generally the result of accident.

The selection of a teacher is an important work which is generally fixed when the teacher enters the school, well supplied with every auxiliary, a public sentiment and an earnest committee, still in the hands of the school.

The committee may suggest, advise, urge, but the work goes on in the teacher's own way.

The system is a continual embarrassment to the school, and the committee is invariably held responsible for results. It is their special business to determine the fitness of a candidate, and they ought to be responsible. For when they select the best he can, the candidate, though with many attainments, may yet fail to satisfy the school for the situation in view. Such cases are not infrequently a few hours before school is to begin. The school has been given that school will begin the next day, whether has come from a distance, perhaps has to travel, and is a person of culture, possessing the most valuable attainments, qualified for the situation. What shall be done? The duty of the committee is plain. But there is no other result, if they try again. The committee may select a better qualified for some other school in the district, and assign him, in a choice of evils, and in a dilemma, but they have no alternative. They may, in their judgment, or reject one who firmly believed in, perhaps, has often been approbated by committee, and succeed after all. Rejection would be to him not only an injury to his reputation, in localities where the candidate and friends would perhaps resent the appointment, and only the committee censured. The committee, in view of all these things, and the fact that the school, if absolutely necessary, should hesitate to reject a candidate not qualified for their purpose, and allow him to begin the school begins, and the first few days of the school a total failure. But the failure is not so complete, especially as the same difficulties might again arise, the teacher may have the faculty of self-reliance, and thus create a temporary public opinion which would not sustain such a proceeding. The school is not a failure; the children have acquired bad habits, if

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PLYMOUTH COUNTY

ABINGTON.

Since our last report public attention has been extensively directed to the subject of school-discipline, and events in our midst, in their proper place, have led many of our fellow-citizens to take a new interest. Our views have been asked, and we have responded.

The necessity of good order in our schools is universal. There must be quiet; there must be obedience. The teacher is to be respected and maintained, and all pupils, without exception, are to understand that the demand for subjection to authority is absolute. How this idea shall be fixed in the mind of the child, is the great question. It is not enough to urge the teacher to iterate it in the schools. All this may be done, and the teacher enthroned in the school-room.

The result desired is as intimately connected with power as it is with peace or acquired, as is instruction in its restricted sense. The teacher is naturally gifted with the power of controlling others. The power of command is not native may be gained by a careful study of the human mind, its nature, and the methods of inducing a given course of action. In order to train to good conduct there must be a knowledge of the principles, and these inculcated, not by a single announcement, but by frequent and patient presentation.

The child has a conscience which is always on the side of right. The teacher's assistance the teacher should ever invoke. The teacher's authority, when it renders it obligatory unless it is wrong. The teacher's duty is to be for the interests of the school, for the welfare of the child. There is a claim of aid from the moral powers. A teacher who does not make its appeal to the moral susceptibility of the child, fails in the heart.

A good teacher governs much by means of the affection. The teacher shows that there resides in the instructor's soul a love for the child, a love for the pupil, and a desire for his welfare, irrespective of his position. The teacher's office, does very much in the way of control. This is the secret of success in the management of a school. There is no other way.

One who can do nothing in this way, has no right to be in the teacher's solemn charge.

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at some means, which would not seem violent in each case of juvenile offence might be made to move the culprit and admonish the school without being forced to the conclusion that the most skilful teacher can administer corrective discipline in this form. There can be so benefited when other means fail, that a single instance of the kind has recalled to a sense of duty a case in hand is such a one should not be met with great care should be exercised in each instance. When the conclusion is inevitable that corporal punishment should be administered, it should be administered as a duty, not as a punishment, desirable, but because the welfare of the pupil is imperative. If the infliction is made in anger, the teacher is guilty of wrong, and is not likely to be successful. There should be calmness, dignity, and self-control.

Any expression as remote from the scene should be the spirit of the punishment, are utterly inadmissible.

On such an occasion, of a "warm jacket," or indignation, he is in another way guilty, and is doing a disservice.

Punishment should never be administered in a hasty or violent manner, but should be regulated by the facts. The head should be exempted from punishment, the rod, or the hand—even of the open palm—should be obvious to require extended remark. A single word of prohibition should be a sufficient prohibition.

It is not for us, coolly to present, in form, that the teacher should know enough of the human mind.

In many instances a consideration of the duty of the teacher of the hand might have saved various parties. A wise discrimination regarding this punishment, being the scenes of petulance, and the theatre of the school, is further to be remarked, that this punishment is frequent. As a common occurrence it tends to weaken the authority of the teacher. It awakens bad emotions, and prevents the teacher from being an instructor, and seldom brings about even the obedience. No schools are worse governed than those which administer a large amount of corporal punishment, and no teacher who administers corporal punishment to a considerable extent, should be considered otherwise than as a failure in the profession, while a school which administers no corporal punishment, and is lacking in knowledge, with little or none of the preparation for the great work of training the young.

BOARD OF EDUCAT

l any request, remonstrance or suggestion,
ard to school or teacher. We cannot con-
; could be guilty of a wilful or wanton
s of a district; and we would say, that
ly suggestions, and wish always to be
gs and desires of the people.

School Committee.—PHILANDER LEACH, JOHN A. LOT

DUXBURY.

e committee would say a word in rega
ts, as the matter, by not a few, does not
stood. The law says "that a school distr
o far as to prosecute and defend in actions
s of the district, and take and hold in fee
, real or personal, given to or purchased b
f a school or schools therein." It will be
that districts are instituted mainly on acc
and not for the election of officers and th
listrict elects its own clerk, and by courtes
ey are chosen by the town. The prudent
rity from the town, and not from the distr
hing the districts on the part of the town
the corporate powers of the districts, wh
wning the school-houses and the land on
a condition of this privilege, the inhabit
ain their school-houses and furnish all that
achers, for the comfortable and success
n. If a suitable structure and convenienc
ts, the town, through its own agents, is
ssess the cost upon the districts. The co
is the introduction of much inequality
r district will build a cheap house, when a
atch up an old one so long as it exhibi
modation. Where the district system doe
d and repaired by the town; and a poor
rs and other considerations require it, can
s a wealthy district. Where the system
are an exponent of the condition of the p
lic spirit, as the churches of the land
ony, the interest or want of it in religion
well in their vicinity.

ere are doubtless many of our scholars whose circumstances would enable them to purchase the instruction they desire, who would not object to a free High School exist, open to all, and thus obtain the influence of which, in its reaction upon the town, would be elevating and remunerative.

And we confidently believe that if the citizens of this town embrace the earliest opportunity to establish a High School, as the Commonwealth requires, they will soon have the honor of it; they are not only loyal and law-abiding, but have the necessities of our schools and the interests of the rising community urgently demand.

We are aware the objection will be raised, that it cannot be done at such times. But is it really so? It should be considered that the elements of a good population always flow into those towns which with a liberal hand the best schools. This will tend in proportion, not only to elevate the society, but to give to the town a business, and increase the value of property. On the other hand, to neglect the intellectual claims of the community, and deprive it of the advantages which neighboring towns are giving theirs, is to lose the principal inducements for retaining desirable families, to depreciate your estates, and, what is far worse, to lower the social standard. Can this be afforded?

With a valuation of \$1,030,000, a tax of one-third of one cent would produce a sum amply sufficient to establish such a school, and employ a permanent teacher. Then as the scholars in our District become qualified, they could be admitted to this school, and enjoy, what is so much needed, the benefit of thorough teaching, and be relieved of the necessity so prevalent of being acquainted with a new teacher and his new methods at the beginning of each term.

It is estimated that the amount expended annually in this town for instruction in schools and academies in other towns is less than twenty-five hundred dollars. And the money required to support of three such pupils abroad would be sufficient to employ a High School teacher.

We expect also the inconvenience of attending, on account of the distance to the school-room, will be an objection, which to some in the town may appear insuperable. But can parents thus located prevent their children without some inconvenience? It has been said, "that learning is a hidden treasure; the diligent, the persevering, the sacrificing student alone finds it." As the High School is a "habitation," and cannot be made a peripatetic to bring

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the proper teacher to that school requiring certain at particular district.

an established fact that those towns where the districted are well satisfied with their action, and would not consider of things. Shall this town be the last in the State which has proved a success; It is well to be conservative of the ridiculous notoriety of Wallop, a school district noted: "Its school-house adorns the first edition of 'Bibliography,' to illustrate what school-houses were formerly since a denizen of the district left a few hundred dollars expended in support of the school, provided they send their children to school at the same time, and just as many times as he did when he was a boy. Last year they received a salary, in common with other districts, from the State. The last act was to vote to sell it for eight dollars!"

The whole town is taxed for the support of schools, as are the other districts. The old revolutionary plea of "taxation without representation" cannot be urged. Still another advantage is that in districted school-houses, the whole burden of the expenditure is borne, and not, as frequently, on a district where the taxes are inadequate to large expenditures.

We trust the citizens of Halifax will see the advantage of the new system. We know how difficult it is to give up old habits, but that you are acting in behalf of your sons and daughters, and perpetuate your memories. Will you do them a simple favor?
School Committee.—NATHANIEL MORTON, IRA L. STURTEVANT, SAMUEL

HANOVER.

I would bring to the notice of the town, that the law requires that there be schooling in each district each year. If this is not done, the town is liable to complaint, prosecution and heavy fine. In Hanover, schooling has not been given, except in those districts where the trustees have been able to secure teachers for about five dollars. Four out of our eight schools have been without winter schooling. Every citizen of the town should feel ashamed, and should bring forward the remedy at the next town meeting, viz.: to ap-

propriate the imperative demands of the schools require the sum of \$1000 for the next school year. The man who only looks at the dollars and cents, will thrust his hand into his pocket and grasp mightier than ever, the old pocket-book, and the greenbacks. The man who thinks only of bank and

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in in one part of the town, and six
part? On the other hand, why
l and crowd sixty into another?
rt of schools. Why should not th
for education? We see no good
made as nearly equal in numbers
t. Equality of rights and privilege
t fail to grant it to our children.
n is neither new nor untried. It
s in all the cities and most of the
and intelligence, and where it has
he expectation of its warmest frie
intage it affords of classing and
equal attainments, and the inter
om one class or grade to another.
u will give to the subject of schoo
deliberation which is demanded b
remembering that as we have freely
act wisely in the present, and giv

JOSEPH Z. THOMAS, OTIS L. BONNET, JOSEPH

KINGSTON.

has been taken the past few years with
a natural gift, but we have found the
rt of genius called application.
who have not missed a single word
ting words is indispensable, since
correctness of the spelling is not
d of oral spelling, the distinct utter
eir proper pronunciation. Spelling
ice to reading, may be compared
g of the stones to be laid in the
e. It may seem like a small mat
w a misspelled word mars an epist
w a mispronounced word detracts f
urse, or a word used out of its tr
ses to move, to the retarding, if no

ship undoubtedly depends in the f
directions of the teacher, then upon
sufficient time must be given for

ht to be daily encouraged, and all the perceptive faculty cultivated. Let even young children become incisioners and surveyors. Why may they not read with the moral or crystal, a fern or a flower, as do older ones? For of the domestic fowls and the birds of the garden they may be made acquainted with the habits of the songsters in the grove; and from the rose in the parlor vase they may extend their range of exploration till they are able to identify the plants with a great variety of the plants of the town. Under proper care, a taste for natural history will be awakened, and in gratifying this desire by gratifying it, there will be a most valuable privilege of the study at the High School. With enthusiasm for the wonders of nature in our teachers, the study without lessening instruction in other branches at all. It will become an agreeable refreshment, from which the scholar will turn to the severer studies with all the greater animation and zeal.

Superintendent.—JOSEPH PECKHAM.

MARION.

The schools in this town lack a proper harmony between culture and their training in civil and moral deportment. Each of these is essential to the highest efficiency of the Public Schools. The impression is much too common, that the only design of these schools is to educate the pupils to certain branches of literature and science. This, however, is not what is required in our Common School system of these schools, where civil manners, courteous and well-bred, are taught and required, and where all immoral conduct is repressed, there is a palpable disregard to law, as set forth in each case of this sort there is a failure to accomplish the object contemplated in our Common School system.

On the subject of class books in our schools, my own experience with those of the Agent of the Board of Education, is in language. "I question," says he, "the wisdom of requiring the same branch in three different books, to learn the same facts in three different forms of statement, involving confusion of ideas. Instead of working through the Common School, Common School and High School book, whether in grammar or arithmetic, let them early give more time to reading, to object lessons and natural history, to counting, to the simple exercises in mental arithmetic, till they have made up one sufficient and substantial text-book on these

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on of our winter schools has very much changed with the times. Forty years ago a large part of the scholars in the winter, were boys and girls of sixteen years and over, and women could attend school if the weather and passers-by would carry their younger brothers and sisters; but now the winter school are very nearly the same as of the summer, and to travel long distances in the rough weather at the month of March.

When we say if the appropriation is large enough to keep the schools open for six months in the year, let the spring term commence in April, and continue till the middle of July; then have a vacation; then the fall term continue till about a fortnight before Christmas; then a fortnight's vacation; then continue until the middle of March. Perhaps some would think this plan of having so many vacations would give a greater change of teachers. It would give an expense with the services of an inefficient teacher. I would recommend you to retain the services of a good, useful teacher as long as she could be had.

School Committee.—FRANCIS COLLAMORE, WILLIAM WHITING, C.

PLYMOUTH.

It is very encouraging to all those who take the progress of education among the people, to observe the steady growth in their attachment to the Public Schools. The experience of the country, during the last few years, has witnessed all, in the most lively manner, with the vast amount of money expended over an uneducated nation. This feeling is everywhere, and augurs well for our future advancement. Education belongs to civilization and national power. This is the reason, when the heart of the people is, in a remarkable manner, excited, will not be neglected by those who best comprehend the needs of the age and their probable results, in their early foundations of learning broad and deep among the masses, and the way forward beyond the limits of elementary education. A higher appreciation of moral over physical good, and a more dignified culture of the mind.

The possibility of making our town a more refined home for others who may be seeking a new residence, our greatest exertions in the improvement of our schools, and the success of these our prosperity as a community depend upon the advancement of any other public interest. We cannot have the highest culture of life, unless they have been

o a teacher, and a healthful stimulus to the scholars. Only from eight to ten or twelve scholars, and under all instances the teacher must possess more than a common and a rare devotion to her calling, as well as a rare ingenuity, to be able to wake up and keep alive anything like or prevent the exercises of the school-room from becoming dull and listless. With only one or two engaged in the study, what possible ground is there for earnest application, what stimulant to excel? That youth must be a rare general rule, who will engage with real zeal in the acquisition from a conviction of its intrinsic value, and hence apply the same devotion in private or alone as in a class of desirous to excel each other. Let any one go and spend a day in a school of from eight to twelve or fifteen boys (not by whom they are taught,) and then let them go and spend time in district No. 4, or No. 1, connected as it is with the larger schools and the wonderful inspiration of numbers.

If nothing else has been learned by the experience, this lesson has been learned. That is, that the arrangement or rather, when only so few scholars attend that it properly class them and yet have all kinds of studies and advancement, is a very inefficient and expensive process. It plagues and vexes the teacher with a vast number of recitations, while it leaves the individual pupil with very little attention from the teacher, either out of or in the class, and the pupils (especially the younger ones,) to be either really neglected, or to think themselves so, and hence to complain of neglect, and in a course that leads the parents to find fault, and charge indifference, if not with positive partiality and unfaithfulness.

School Committee.—JAMES R. CUSHING, SAMUEL BUMPUS, GEORGE

SCITUATE.

The subject of school discipline is attracting attention at this time; one party advocating the abolishment of corporal punishment, the other is engaged in its defence. The reaction from the times of our fathers, and the substitution of female for severer masters, have wrought a wonderful change in the discipline of our schools. But is there not danger of passing to the other extreme? It is not intended to disparage the influence of an affectionate teacher, but between the teacher and pupil; but love alone can never suffice. A teacher with a noble patience, a rare tact, and a deep

on as life itself, and will you not aid her in the little
 oing them for their future welfare, and thus your own
 ll the means that you possess? "But," says some one, "
 work." Paid for her work? So is a painter; and wou
 a his work on inanimate things, marring and disfigurin
 hat he or some one else must needs repair the injury
 oraver? How much more care then should you exer
 f one who is dealing with animate and immortal materi

Paid for her labor! Paid for developing the imm
 value of such labor cannot be reckoned in dollars and
 not to be spoken of in comparison. We would th
 appreciate the work that a teacher has before her.
 another, "She who in the Public School starts the y
 career of endless gathering, may, perhaps, be perm
 whether it shall surge with tumultuous passions, or pass
 n tides of peace and usefulness. Wisely to discharg
 work of deep design, of trembling care, of trustful
 work is full of immensity, and while we seek teachers
 grandeur of their calling, we earnestly entreat the par
 they throw stumbling blocks in the way, or carelessly d
 mind for life, both here and hereafter, when by kindly
 pathy and co-operation to the teacher, both can work fo
 perfect harmony. Every true teacher craves the help
 parents, and your coldness and perhaps prejudice re
 children, often constitute a weight that a sensitive natur
 this reason they fail to accomplish the high aim they
 selves, and leave their position in despondency, suffering
 discouragement of failure, when they did not fail.
 parents must surrender personal opinions and wishes to
 experience of the teacher, if they would have their c
 most benefit from the opportunity and means of educ
 free and generous sympathy is given to the teacher and
 manifested to sustain her authority, we think it would
 the most unruly child would quietly submit; and the
 male teacher in the winter season be an unnecessary ch

School Committee.—DAVID B. FORD, JAMES SOUTHWORTH, FR

WAREHAM.

The business of selecting school teachers is often qu
 of those elected for this service. They may excel in th
 ion, but their talents have not been so trained and c
 hem for the duty in question. We are all liable to

e, or any delinquency in this respect, is a breach of the
 handling of money belonging to others and intrusted
 at sacred of purposes. Your unskilled mechanic constr
 practicable, or unseaworthy ship, but your unqualified te
 on the stormy sea of life innumerable barks, without
 ral furnishing requisite for the successful direction
 re best men who can be obtained should be selected
 nding committee, and then the whole business of emp
 ould be intrusted to them.

School Committee.—T. F. CLARY, BENJAMIN FEARING, HENRY M.

BARNSTABLE COUNTY

CHATHAM

We have long endeavored to establish a regular course
 rammar Schools. Scholars who attend them are re
 established rules, to study at least three branches in ad
 nd spelling; and yet there are many who come only
 ithmetic, and object to pursuing any other study. The
 arn to cipher." Such pupils spend much of their time
 nief, to the great detriment of the school. The fact is, th

apply themselves to the hard study which a knowle
 ography and other branches demands; and pretend to b
 me in "figuring,"—a business which they propose to c
 e. But such young men will find that the time is near
 ys of Common Schools, when the "figuring" will be
 hose mathematical knowledge is backed up by a famili
 ith some of the other sciences. Ciphering is very impor
 its place, but comparatively few find much use for that a
 isiness pursuits. We believe that a knowledge of the
 nguage, and the geography of our own and other count
 th an acquaintance with common and the higher math
 ilosophy, and perhaps a little physiology, would aff
 tisfaction, and in the end be productive of greater benef
 ho shuts his eyes to all these, and narrows himself down
 ite and pencil in school, will seldom obtain much knowle
 assessed of a superior mind; and we believe that no bo
 th more than ordinary mental faculties would attend a

been arraigned by the teacher for his misdemeanor. A rat of passion bids his boy "pitch him out of the school." Such like innuendoes and commands, are retailed all over the place, and become the common theme in all the places of resort;

this injudiciousness is, your school becomes just what the outside indicates,—a perfect failure. Would parents pursue a different course, and if we have been so fortunate as to obtain a good teacher, keep him so, and if we have been so unfortunate as to have a teacher of inferior attainments and taste, then counteract by their presence oft repeated in the school-room, giving encouragement there, refraining from, and discountenancing fault-finding outside, whether by parents or pupils, would be the result!

Some persons pursue a policy with reference to their school quite opposite to that pursued in the prosecution of their business. When the captain of a ship employs a mate or a subordinate, ever so good, he does not yield the entire charge of the business pertaining thereto to such subordinate. The captain confides the entire management of his business to his clerk, and in the highest order. How much more would these men, who employ in their employ were of inferior qualifications, unfit for their position, watch with an eagle's eye the work they may be engaged while they have such men in their employ. Parents be thus wise and prudent in their course towards any a school, which would otherwise prove a failure, and observe in a high degree the object desired.

School Committee.—M. S. UNDERWOOD, JAS. S. HOWES, THOMAS

EASTHAM.

Absence and Irregularity in Attendance.—Parents are so conscious of their right to the public money to educate their children that when that point is secured (with some parents,) their anxiety and the most trifling demand or desire will keep the child absent days and sometimes months. Now suppose the town should require the parents of one-third of their proportion of the public schools, what a clamor should we hear, and the injustice of such a course would be trumpeted far and wide. And the difference in the result to the child, whether it be deprived of education by the unfairness of others, or by their own negligence and neglect, gain what parent would not be indignant if charged with the necessary food and raiment for his child? Yet which is the worst? To starve and pinch the body or starve and pinch the mind? When the pu

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ask, of course we do not even wish, that our school institutions where the "ornamental" branches of education are exclusive or controlling away. We want nothing that is in some sense useful as well. But we do ask that the child be so led on and upwards in the way of wisdom, and encouraged to its enlarged attainments, that neither in the future occasion to blush in coming years, at the smallness of its attainments, and the poverty of their qualifications for the duties of life. We know not what career is before the child, what posts of honor and usefulness may offer the child's acceptance. But we do know this; that life can have for the child in the future no noble gifts of greatness and gladness, no training,—large and generous and elevating,—shall be that no learning is valueless which develops the mind, no learning which enriches the intellect and heart.

School Committee.—CHARLES DILLINGHAM, HIRAM T. GRAY, W.

WELLFLEET.

The true wealth of a State is the intelligence and virtue of its people, therefore, the first duty of a State is the right education of its moral forces. Our own State may not boast of fertility in mineral ores, nor of vastness of territorial possessions, but she has a power that is felt to the farthest bounds of our knowledge. The vigorous intelligence her schools and colleges give to her children. While she is true to this duty, and faithful to her integrity, her star will ever shine brightest in the constellation of New England. While New England guards her firesides and nurtures her schools, she will ever remain as now, mighty in the strength of her moral force, and rich in the proud wealth of intelligent mind. The legacy of Puritan sires be watched and nurtured as the sacred fire, and fed the sacred fire.

We rejoice that our town, during the last year, has taken to the demands of the times, and determined to do so with no grudging hand. We congratulate you on the last year to give additional educational privileges to our town. The old district system has been abolished, the schools have been remodelled and refurnished, and now with more fitness and convenience.

Two new houses have been erected, which will furnish the accommodations demanded by law and the necessities of our pupils. The schools have been graded, so that by successive steps the scholar may pass from the Primary to the High School, as his progress in study

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sols; and congratulate the friends of education in Massachusetts for their successful prosecution of the schools, for the full period has been enjoyed in former years. There have been some sicknesses of pupils, and other usual impediments to school progress. The year has been characterized with success and interest.

North District.—The summer term was taught by Miss M. A. Smith, who, from her ample qualifications and fidelity of the teacher secured marked improvement in the pupils, although less than it would have been had she been able to maintain stricter discipline. Length of term, 19 weeks; whole number of scholars, 20; average attendance, 18-6.

The winter term was taught by Mr. V. B. Collins, a teacher of many years' experience, with his usual success, securing marked improvement in the pupils, with respect to neatness, order and general interest. Length of term, 17 weeks; whole number of scholars, 45; average attendance, 31 8-10.

South District.—Summer term was taught by Miss J. A. Smith, whose labors were her first school, and her success was most gratifying under the circumstances. Length of term, 19 weeks; whole number of scholars, 11; average attendance, 10-4.

The winter school was taught by Mr. Henry H. Lucier, who, during the previous winter. The sanguine hopes inspired by the success of the summer term, were not fully realized, owing, we think, to a laxity of discipline. Length of term, 14 weeks; whole number of scholars, 12; average attendance, 12 1-4.

The School Expenses for the year are as follows:

North District Summer School, wages of teacher,	.
" " Winter School, " "	.
Cooks, fuel, and agency,	.
South District Summer School, wages of teacher,	.
" " Winter School, " "	.
Cook, fuel, &c.,	.
Printing report, and superintendence,	.
Total,	.

In conclusion we would appeal to the parents and pupils, to join their best efforts with those of their teachers in making our schools what they ought to be, and in affording to our children the inestimable blessings which our school privileges impart.

School Committees.—MATTHEW AMOS, WALTER MINGO, FOSTER I.

BOARD OF EDUCAT

nd for schools; not considering that it g
for instructing each child a year. Probabl
his child educated, would think that twent
is was too much for the purpose. That
between five and fifteen years of age wou
ree thousand dollars. We leave it to the
whether they will raise that amount; bei
between the ages above named.

he District System.—The town, at its ann
ished the school districts. So far as rel
here, the districts in this town have been
t, some fifteen years; the school comm
loyed all the Public School teachers during
abolition of the school districts will be, th
ide for the furniture and repairs of all the
se several districts, as heretofore; the ag
no doubt be considerably less than und
sion of the school money will be made with
he children, without reference to district
on, if affairs are managed as they should
et the step they have taken in this matter.

School Committee.—JOHN PIERCE, FREDERICK P. FEL

SUFFOLK COUNTY.

TOWNS.	Population - State Census, 1885.	Valuation - 1885.	PUBLIC SCHOOLS.	No. of Scholars of all ages in the Public Schools.		Average attendance in the Public Schools.		Persons under 5 years of age who attend the Public Schools.	Persons over 15 years of age who attend the Public Schools.	No. in the State between 5 and 15 years of age May 1, 1885.	NO. OF TEACHERS IN PUBLIC SCHOOLS.			
				In Summer.	In Winter.	In Summer.	In Winter.				Summer.	Fall.	Winter.	Total.
Boston, . . .	192,324	\$878,303,857	282	27,712	28,284	25,786	26,396	-	1,511	35,225	59	535	60	540
Chelsea, . . .	14,403	7,706,745	51	3,032	3,001	2,712	2,547	14	174	8,820	2	54	2	54
North Chelsea, . . .	858	860,359	4	174	158	119	124	7	5	179	1	8	1	8
Winthrop, . . .	634	406,289	3	127	126	105	106	8	9	124	-	3	-	3
Totals, . . .	208,219	\$887,276,700	340	31,045	31,569	28,722	29,175	24	1,699	88,848	62	595	63	600

ESSEX COUNTY.

63	858	4	17	4	17
38	983	1	21	1	21
98	1,057	8	18	8	18

SUFFOLK COUNTY—Continued

BOARD OF EDUC

TOWNS.	Amt of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from same.	Income of Funds, as of Surplus Revenue, appropriated to schools, that may be so appropriated or not.	HIGH SCHOOLS.				IN CORP. ACADEMIES.			UNINCOR. ACADEMIES & PRIVATE SCHOOLS.		
				Number.	How supported.	Length. Mcs. Days.	Salary of Principal.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.	Number.	Average No. of Scholars.	Aggregate paid for Tuition.
Boston,	\$7,000 00	\$472 60	-	1*	Taxation,	10.09	\$8,625 00	1	-	-	53	1,785	\$192,198 00
Chelsea,	-	-	-	1	"	10.10	2,800 00	1	-	-	5	125	7,200 00
North Chelsea,	-	-	-	-	-	-	-	-	-	-	-	-	-
Winthrop,	-	-	-	-	-	-	-	-	-	-	-	-	-
Totals,	\$7,000 00	\$472 60	-	2	-	-	\$5,925 00	-	-	-	63	1,960	\$199,398 00

ESSEX COUNTY—CONCLUDED.

BOARD OF EDUCATION.

[illegible]

Ludlow,	3	13	36.19	31	51.10	0.11	40 00	20 00	1,300 00	130 00	90 00
Monson,	4	27	52.10	56.10	109	5.15	40 00	22 50	2,500 00	400 00	150 00
Montgomery,	2	8	17.10	16.05	11.10	8.15	38 50	28 40	575 00	282 00	17 00
Palmer,	1	28	11.10	62.17	123.15	7.09	50 00	25 80	3,500 00	-	245 00
Russell,	-	6	15.15	26.05	42	6	-	18 65	500 00	237 00	20 00
Southwick,	-	14	89	33	72	7	-	24 15	800 00	272 50	66 50
Springfield,	9	90	320	320	640	10	135 50	39 07	42,950 00	-	2,148 00
Tolland,	-	10	13.10	21	11.10	6	-	28 61	500 00	430 00	26 00
Wales,	3	5	15.19	16.03	11.07	6	29 00	22 18	750 00	30 00	46 50
Westfield,	3	38	103	104	207	9	88 00	29 00	8,000 00	-	300 00
West Springfield,	-	20	11.07	48	11.07	8	-	23 79	2,400 00	64 00	158 75
Wilbraham,	3	18	10.10	42	78.15	6	38 00	22 45	1,600 00	75 00	90 00
Totals,	47	434	4.01	3.16	7.17	-	\$52 92	\$24 11	\$96,001 00	\$5,482 75	\$4,689 00

TOWNS.	Am't of School Funds, the income of which can be appropriated only for the support of Academies and Schools.	Income from same.	Income of Funds, as of surplus revenues, appropriated to Schools, that may be so appropriated or not.	HIGH SCHOOLS.				INCOEP. ACADEMIES.			UNINCOR. ACADEMIES & PRIVATE SCHOOLS.		
				Number.	How supported.	Length. Mon. Days.	Salary of Principal.	Number.	Avg. No. of Scholars.	Aggregate p'd for Tuition.	Number.	Avg. No. of Scholars.	Aggregate p'd for Tuition.
Ashfield, .	\$810 00	\$48 60	-	1	-	-	-	1	-	-	1	6	\$100 00
Barnardston, .	10,748 00	1,048 00	-	1	-	-	-	1	-	-	1	60	1,450 00
Buckland, .	915 66	54 94	-	1	-	-	-	1	-	-	3	60	130 00
Charlemont, .	800 00	48 00	-	1	-	-	-	1	-	-	1	-	220 00
Coleraine, .	-	-	-	1	-	-	-	1	-	-	1	18	-
Conway, .	-	-	-	1	Taxation,	5.10	\$400 00	1	-	-	1	-	216 00
Deerfield, .	10,000 00	600 00	-	2	"	10	1,000 00	1	16	\$229 04	-	-	-
Erving, .	-	-	-	1	-	-	-	1	-	-	-	-	-

191 20
3,187 20
||

PUBLIC DOCUMENT—No. 2.

Fall River, .	7	71	209.12	177.08	107	9	108 81	49 40	80,500 00	-	1,453 00
Freetown, .	-	12	30	28.10	58.10	7.06	-	28 58	1,500 00	-	62 80
Mansfield, .	2	17	97	27	54	6	42 50	27 80	1,947 86	-	118 00
New Bedford,	7	81	170.12	172.12	348.04	10.08	115 77	41 83	89,889 58	-	2,500 00
Norton, .	2	14	26.04	28.08	54.12	0.00	40 00	35 47	1,500 00	-	92 85
Raynham, .	1	11	23.07	25.18	49	0.06	45 00	80 62	1,800 00	-	78 00
Rehoboth, .	2	20	45	45	90	0	86 00	22 00	2,200 00	90 00	75 00
Seekonk, .	-	14	24.13	26.10	51.08	6.08	-	22 18	745 14	17 00	45 00
Somerset, .	4	8	18	10	97	6.07	50 00	23 75	1,655 50	-	108 00
Swansea, .	5	18	26.10	35	61.10	6.06	41 60	27 57	1,885 89	42 00	52 00
Taunton, .	6	67	186.15	242.10	429.05	5.10	85 67	28 27	20,228 22	-	1,029 00
Westport, .	5	28	78.14	69.06	148	7.08	88 00	18 32	2,500 00	450 00	128 00
Totals, .	62	483	8.17	8.18	7.15	-	\$53 50	\$27 52	\$127,651 19	\$1,538 00	\$6,495 46

Manassas,	700 00	80 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	137	800 00
New Bedford,	15,000 00	300 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	475	11,500 00
Norton,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Raynham,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	125 00
Rehoboth,	2,800 00	286 88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Seekonk,	3,181 00	190 86	\$264 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	15	26 00
Somerset,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	110	225 00
Swansea,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	150 00
Taunton,	3,500 00	850 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	1,400 00
Westport,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	18	500 00
Totals,	\$46,981 00	\$2,605 74	\$264 00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	\$17,225 00

• Catholic schools.

	SCHOOL.			Average length of school year.	Average wages of teachers per month, including the value of board.	Average wages of male teachers of month, including value of board.	Paid by taxes, schools, fuel, car, board, and school room, for the school year 1906-7.	Amount of board, do., voluntarily contributed for the schools.	Expense of Superintendence and Printing School Report.
	Ac.	Total.	Days.						
Chilmark, .	2	18	9	6	\$40 00	\$21 00	\$500 00	-	\$49 00
Edgartown, .	1	54.08	34.13	7.08	80 00	20 18	2,200 00	-	150 00
Gonold, .	-	6	8	6	-	26 00	100 00	\$12 00	6 50
Tisbury, .	5	54	27	6	87 20	16 45	1,800 00	-	90 00
Totals, .	8	6.06	8.10	-	\$54 40	\$20 91	\$4,600 00	\$12 00	\$295 50

NANTUCKET COUNTY—CONTINUED.

Nantucket, .	4	24	5.08	10.15	\$80 00	\$20 00	\$8,500 00	-	\$120 00
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COUNTIES.	Population—1880. Census, 1880.	Valuation—1880.	PUBLIC SCHOOLS.	IN THE PUBLIC SCHOOLS.		PERSONS UNDER 18 OF AGE WHO ARE IN THE PUBLIC SCHOOLS.		PERSONS OVER 18 OF AGE WHO ARE IN THE PUBLIC SCHOOLS.	No. in the State between 18 and 19 of age May 1, 1880.	
				In Summer.	In Winter.	In Summer.	In Winter.			
Suffolk, . . .	208,219	\$387,276,700 00	340	31,045	31,569	28,722	29,175	24	1,699	88,848
Essex, . . .	171,192	90,393,467 00	523	30,409	29,785	24,553	23,952	193	2,199	85,784
Middlesex, . . .	220,618	155,324,723 00	741	47,688	47,349	36,446	36,185	487	3,635	46,893
Worcester, . . .	162,923	80,857,766 00	780	31,404	32,088	25,496	25,700	823	4,166	34,315
Hampshire, . . .	81,199	20,510,994 00	252	7,447	7,586	6,020	6,150	200	923	8,301
Hampden, . . .	64,438	33,253,177 00	309	10,975	10,967	8,212	8,362	295	1,095	12,431
Franklin, . . .	81,842	13,043,120 00	255	5,801	6,569	4,853	5,349	243	1,177	6,605
Berkshire, . . .	56,966	27,937,444 00	314	10,441	10,575	7,272	7,389	371	863	12,803
Norfolk, . . .	116,334	95,097,794 00	475	22,924	22,943	18,676	18,727	379	1,753	24,847
Bristol, . . .	89,505	59,464,668 00	321	16,713	16,999	12,440	12,305	316	1,396	18,369
Plymouth, . . .	63,074	27,932,058 00	315	12,543	12,017	10,144	9,859	383	1,274	13,392
Barnstable,* . . .	34,489	14,276,198 00	182	6,355	7,542	4,940	6,131	149	1,587	7,420
Dukes, . . .	4,200	2,183,975 00	21	711	722	595	570	26	125	775
Nantucket, . . .	4,830	2,152,588 00	10	785	700	590	600	—	79	715
Totals, . . .	1,267,329	\$1,009,709,652 00	4,848	235,241	237,364	189,149	190,954	3,899	21,976	261,493

* Inclusive of Mashpee District.

BOARD OF EDUCAT

VENING SCHOOLS, AS RETURN MITTEES.

	Males.	Females.	Average No.
wrence, . . .	200	150	820
mbridge, . . .	105	85	125
ddford, . . .	66	18	80
inchester, . . .	25	11	32
orcester, . . .	81	-	28
ringfield, . . .	75	65	95
estfield, . . .	20	20	35
abury, . . .	100	125	110
Il River, . . .	280	84	218
w Bedford, . . .	192	190	100
rmouth, . . .	64	62	11
Totals, . . .	1,867	813	1,225

RETURNS OF SCHOOLS IN STATE CHARITABLE AND REFORMATORY INSTITUTIONS.

STATE INSTITUTIONS.	No. of Schools.	No. of Scholars of all ages in all the Schools.		Average attendance in all the Schools.		Persons under 5 years of age who attend School.	Persons over 15 years of age who attend School.	Number between 5 and 15 years of age May 1, 1902.	No. of Teachers.				Number of different Teachers.		Length of Schools.	Wages of Teachers per Month.			
		In term including Summer.		In term including Winter.					In Sum'r.		In Winter.		Summer.			Winter.		Males.	Females.
		In term including Summer.	In term including Winter.	In Sum'r.	In Winter.				Males.	Females.	Males.	Females.							
Almshouse at Monson,*	7	-	518	-	326	13	11	-	1	6	1	7	1	11	12	\$50 00	\$13 00		
Indus. School at Lancaster,	5	199	178	144	134	-	88	66	-	5	-	5	-	7	12	-	20 88½		
Nautical School,	2	541†	-	284†	-	-	303	238†	2	1	2	1	2	1	12	96 00	17 00c		
Reform Sch'l at Westboro',	7	494†	-	303	345	-	-	832‡	2	5	2	5	5	5	12	46 00	25 00b		

* Schools in the State Almshouses at Bridgewater and Taunton have been transferred to Monson.

† On September 1st.

‡ On September 30th, 1902—439 pupils.

c Exclusive of board.

d And board.

† For the year.

‡ Board, fuel and lights furnished.

GRADUATED TABLES—FIRST SERIES.

showing the comparative amount of Money appropriated by the
 erent Towns in the State, for the education of each Child in the
 on, between the ages of 5 and 15 years.*

TOWNS.	Sum appropriated by towns for each child between 5 and 15 years of age.	Amount raised by taxes for the sup- port of Schools.	Income of Surplus Revenue appropri- ated to Schools.	TOTAL	No. of Children be- tween 5 and 15 years of age.	Amount contributed for board and fuel.
BROOKLINE, .	\$21 84.1	\$22,050 83	—	—	1,005	—
Nahant, .	19 22.7	1,403 54	—	—	73	—
Belmont, .	18 18.2	4,400 00	—	—	242	—
Milton, .	17 82.1	9,000 00	—	—	505	\$100 00
W. Roxbury, .	17 08.6	20,000 00	—	—	1,174	—
Newton, .	16 84.4	34,059 48	—	—	2,022	—
Boston, .	16 72.1	589,000 00	—	—	35225	—
Dorchester, .	16 20.6	34,500 00	—	—	2,129	—
Arlington,†	16 20.4	9,171 32	—	—	566	—
Watertown, .	14 90.9	10,600 00	—	—	711	—
Somerville, .	13 89.5	30,000 00	—	—	2,159	—
Brighton, .	13 28.2	12,046 98	—	—	907	—
Needham, .	13 18.8	7,000 00	—	—	583	—
Roxbury, .	12 43.2	79,803 00	—	—	6,379	—
Charlestown, .	12 10.8	62,769 91	—	—	5,184	—
Chelsea, .	12 04.8	40,000 00	—	—	3,320	—
Nantucket, .	11 88.8	8,500 00	—	—	715	—
New Bedford, .	11 69	39,889 68	—	—	3,442	—
Cambridge, .	11 53.1	83,173 04	—	—	7,213	—
Winchester, .	11 49.2	5,510 31	—	—	482	25 00
Springfield, .	11 19.4	42,950 00	\$108 10	43,053 10	8,846	—
North Chelsea, .	11 17.3	2,000 00	—	—	179	—
Dedham, .	11 07.7	16,749 00	—	—	1,512	30 00
Malden, .	10 90.3	17,500 00	—	—	1,605	—
Swampscott, .	10 90.3	3,500 00	—	—	321	—
Worcester, .	10 67	61,875 00	—	—	5,780	—
Lexington, .	10 64.1	4,650 00	—	—	437	—
Waltham, .	10 56.4	12,307 58	—	—	1,165	—
Melrose, .	10 38.3	6,500 00	—	—	626	—
Tyngsborough, .	10 29.4	1,050 00	—	—	102	—
Weston, .	10 23.7	2,293 00	—	—	224	—
Medford, .	10 23.5	12,097 22	—	—	1,182	—
Plymouth, .	10 13.5	12,800 00	—	—	1,263	—

Compare the rank of towns in this Table with their rank in the next or Second Series of Tables,
 the percentage of taxable property appropriated for Schools. † Formerly W. Cambridge.

For 1894-5.	For 1895-6.	TOWNS.	Sum appropriated by law for each child between 5 and 16 years of age.	Amount raised by taxes for the support of Schools.	Income of Surplus Revenues appropriated to Schools.	TOTAL.	No. of Children between 5 and 16 years of age.
824 828		W. Stockbridge,	\$2 94.1	\$1,000 00	-	-	840
828 829		Clarksburg, .	2 87.8	400 00	-	-	189
831 830		Richmond, .	2 86	600 00	-	-	210
822 831		New Ashford, .	2 84.1	125 00	-	-	44
818 832		Dudley, .	2 67.2	1,400 00	-	-	524
825 833		Cheshire, .	2 66	1,000 00	-	-	876
833 834		Hancock, .	2 50	500 00	-	-	200
829 835		Mt. Washington,	1 85.2	150 00	-	-	81
		Marshpee Dist.,	1 83.8	125 00	-	-	68

FRANKLIN COUNTY.

For 1884-5.	For 1885-6.	TOWNS.	Sum appropriated by towns for each child between 5 and 18 years of age.	Amount raised by taxes for the support of Schools.	Income of Surplus Revenue appropriated to Schools.	TOTAL.	No. of Children between 5 and 18 years of age.
1	1	GREENFIELD,	\$8 91.5	\$6,000 00	-	-	678 340
2	2	Sunderland,	8 24.2	1,500 00	-	-	182
10	3	Hawley,	6 52.2	900 00	-	-	138 32
21	4	Monroe,	6 81.8	234 00	\$12 44	\$246 44	89 8
16	5	Conway,	6 00.9	1,983 00	-	-	330 47
11	6	Wendell,	5 90.6	750 00	-	-	127
4	7	Deerfield,	5 87.7	3,961 17	-	-	674 47
5	8	Warwick,	5 71.4	1,000 00	-	-	175 2
8	9	Whately,	5 53	1,100 00	-	-	199 8
26	10	Bernardston,	4 97.1	850 00	-	-	171 5
7	11	Heath,	4 96.5	700 00	-	-	141 3
13	12	Leyden,	4 95.5	550 00	-	-	111 3
8	13	Ashfield,	4 82.6	1,250 00	-	-	259 4
12	14	New Salem,	4 67.9	1,000 00	-	-	214
24	15	Shutesbury,	4 59.8	800 00	-	-	174 2
11	16	Montague,	4 54.5	1,500 00	168 50	1,668 50	366 2
15	17	Rowe,	4 47.8	600 00	-	-	134 1
17	18	Erving,	4 27.4	500 00	-	-	117
6	19	Orange,	4 16.6	1,500 00	-	-	360
14	20	Northfield,	4 11	1,500 00	66 00	1,566 00	381
9	21	Shelburne,	3 94.7	1,200 00	-	-	304 5
20	22	Gill,	3 90.6	500 00	-	-	126 3
19	23	Charlemont,	3 78.2	900 00	-	-	238 8
22	24	Coleraine,	3 49	1,200 00	-	-	344
23	25	Leverett,	3 17.5	600 00	-	-	189
25	26	Buckland,	3 09	1,311 00	-	-	437

BERKSHIRE COUNTY.

6	1	PITTSFIELD,	\$8 99.4	\$18,400 00	-	-	1,916 8
5	2	Lenox,	6 30.9	2,000 00	-	-	817
8	3	Williamstown,	6 11.9	3,500 00	-	-	672
24	4	Stockbridge,	5 93.7	2,500 00	\$200 00	\$2,700 00	452
8	5	Hinsdale,	5 57.2	1,900 00	-	-	341
2	6	Dalton,	5 40	1,500 00	-	-	278
11	7	Peru,	5 26.8	500 00	-	-	95
1	8	Monterey,	5 19.5	800 00	-	-	154
17	9	Tyringham,	4 80	600 00	-	-	125
7	10	Alford,	4 61.6	800 00	-	-	65
16	11	Adams,	4 60.4	10,000 00	-	-	2,172
13	12	Windsor,	4 49.4	800 00	-	-	178
14	13	Sheffield,	4 30.3	2,200 00	\$15 00	2,315 00	538 1
18	14	Becket,	4 27	1,200 00	-	-	281
15	15	Lee,	4 25	4,195 00	-	-	987

BRISTOL COUNTY.

For 1884.	For 1883-4.	TOWNS.	Sam. appropriated by towns for each child between 5 and 15 years of age.	Amount raised by taxes for the support of Schools.	Income of Surplus Revenue appropriated to Schools.	TOTAL.	No. of Children between 5 and 15 years of age.
1	1	N. BEDFORD, .	\$11 59	\$80,700 00	-	-	8,442
2	2	Fairhaven, .	8 67.1	4,500 00	-	-	519
3	3	Swansea, .	7 89 4	1,885 89	-	-	255
5	4	Fall River, .	7 04.4	80,500 00	-	-	1,000
7	5	Seekonk, .	6 68.8	745 14	\$264 00	\$1,000 14	121
8	6	Dighton, .	6 23.1	2,000 00	-	-	821
15	7	Rahoboth, .	6 08	2,200 00	-	-	862
9	8	Taunton, .	5 99	20,228 22	-	-	8,877
4	9	Acushnet, .	5 95.2	1,500 00	-	-	252
10	10	Dartmouth, .	5 48	4,000 00	-	-	730
6	11	Berkley, .	5 29.1	1,000 00	-	-	189
11	12	Raynham, .	4 96.9	1,600 00	-	-	822
16	13	Freetown, .	4 90.2	1,500 00	-	-	806
17	14	Mansfield, .	4 59.3	1,947 86	-	-	424
10	15	Westport, .	4 48.3	2,500 00	-	-	564
13	16	Easton, .	4 36	3,000 00	-	-	688
12	17	Norton, .	4 25	1,500 00	-	-	353
18	18	Attleborough, .	4 08.2	5,500 00	-	-	1,864
14	19	Somerset, .	4 94.2	1,855 50	-	-	420

PLYMOUTH COUNTY.

1	1	PLYMOUTH, .	\$10 18.5	\$12,800 00	-	-	1,268
4	2	Hull, .	7 95.5	850 00	-	-	44
2	3	Hingham, .	7 60.8	5,816 11	-	-	765
7	4	Lakeville, .	7 32.8	1,443 65	-	-	197
8	5	Kingston, .	7 16.2	2,191 62	-	-	806
19	6	Marion, .	7 04.2	1,500 00	-	-	218
5	7	Scituate, .	6 27.8	2,800 00	-	-	446
6	8	Rochester, .	6 00	1,200 00	-	-	200
18	9	Carver, .	5 52.5	1,000 00	-	-	181
13	10	Bridgewater, .	5 36.2	4,000 00	-	-	746
9	11	So. Scituate, .	5 26.3	1,700 00	-	-	323
12	12	N. Bridgewater, .	5 18.7	7,900 00	-	-	1,523
8	13	Halifax, .	5 08.6	700 00	-	-	139
22	14	Pembroke, .	4 95	1,500 00	-	-	303
21	15	Duxbury, .	4 83.2	2,300 00	-	-	476
10	16	Abington, .	4 60.4	10,000 00	-	-	2,172
15	17	E. Bridgewater, .	4 59.4	3,000 00	-	-	653
11	18	Middleboro', .	4 59.2	4,500 00	-	-	980
16	19	Plympton, .	4 30.1	800 00	-	-	186
14	20	Hanover, .	4 24.2	1,400 00	-	-	330
17	21	Marshfield, .	4 21.1	1,600 00	-	-	380
23	22	Hanson, .	4 09.8	1,000 00	-	-	244

A GRADUATED TABLE—FIRST SERIES.

Showing the Comparative Amount of Money appropriated by the different Counties in the State for the Education of each Child between the ages of 5 and 15 years in the County.

COUNTIES.	Sum appropriated by Counties for each child between 5 and 15 years of age.	Amount raised by taxes for the support of Schools.	Income of Surplus Revenue and similar funds appropriated to Schools.	TOTAL.	No. of children between 5 and 15 years of age.	Amount contributed for board and fuel.
SUFFOLK	\$16 26.8	\$632,000 00	-	\$632,000 00	88,848	-
Nantucket,	11 88.8	8,500 00	-	8,500 00	715	-
Norfolk,	10 62.9	263,414 60	\$678 03	264,092 63	24,847	\$695 00
Middlesex,	10 09.8	478,535 64	-	478,535 64	46,893	548 75
Hampden,	7 73.1	96,001 00	103 10	96,104 10	12,431	5,482 75
Essex,	7 28.9	259,613 02	1,214 45	260,827 47	85,784	820 00
Bristol,	6 96.4	127,661 19	264 00	127,915 19	18,889	1,538 00
Worcester,	6 60.6	25,780 61	962 62	226,693 13	84,315	1,051 87
Hampshire,	6 37.7	52,698.45	236 98	52,935 43	8,301	4,983 56
Dukes,	5 98.5	4,600 00	-	4,600 00	775	12 00
Barnstable,	5 89.8	48,625 00	100 00	48,725 00	7,420	1,133 37
Plymouth,	5 57.8	74,701 88	-	74,701 88	13,892	1,006 74
Franklin,	5 16.7	38,889 17	241 94	39,131 11	6,605	5,162 26
Berkshire,	4 70.1	59,546 00	642 52	60,188 52	12,808	9,925 90

AGGREGATE FOR THE STATE.

State,	\$0 02.6	\$2 355,505 06	\$4 419 04	\$2 355,505 06	608,120	\$2 355,505 06
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A GRADUATED TABLE—FIRST SERIES.

ing the Comparative Amount of Money, including Voluntary Contributions, appropriated by the different Counties in the State, for the Education of each Child between the ages of 5 and 15 years in the County.

For 1888-7.	COUNTIES.	Totals.
1	SUFFOLK,	\$16 26.8
2	Nantucket,	11 88.8
3	Norfolk,	10 65.7
4	Middlesex,	10 11
5	Hampden,	8 17.2
6	Essex,	7 31.2
7	Bristol,	7 04.7
8	Hampshire,	6 97.9
9	Worcester,	6 63.7
10	Barnstable,	6 04.6
11	Dukes,	5 95.1
12	Franklin,	5 94.9
13	Plymouth,	5 65.3
14	Berkshire,	5 47.6
Aggregate for the State, including voluntary contributions, .		\$9 14.8

GRADUATED TABLES—SECOND SERIES.

The next Table exhibits the appropriation of the cities and towns compared with their respective valuations in 1865.

The first column shows the rank of the cities and towns in a similar Table.

The second column indicates, in numerical order, the precedence of the towns in respect to the liberality of their appropriations for 1866-7.

The third consists of the names of the cities and towns, as numbered.

The fourth shows the percentage of taxable property appropriated for the Public Schools. The result is equivalent in value to hundredths of mills. The decimals are carried to three figures in order to more perfectly the distinction between the different towns. The term (mills) expresses the principal value, and is separated from the decimal by a point.

The appropriations for schools are not given in the following Table, but may be found by referring to the previous Tables, also in the Abstract of the same, commencing on page ii. These appropriations include the salaries, the income of the surplus revenue, and of such other funds as the towns appropriate at their option, either to support Common Schools, or for any municipal expenses. The income of other local funds, and the contributions are not included in the estimate. The appropriations are the same as in the first series of tables, and for the same reason. The amount of taxable property, in each city and town, according to the Valuation, is also omitted, as it is already given in the foregoing School Returns.

The rank assigned to towns in the next Tables is compared with the same town in the former series, it will be seen that they hold, in places, a very different place in the scale.

For 1884.	For 1885-7.	TOWNS.	Percentage of Value.	For 1884.	For 1885-7.	TOWNS.	Percentage of Value.
58	71	Greenfield, .	2-98	129	120	Washington, .	2-98
89	72	Prescott, .	2-98	148	121	Charlton, .	2-98
10	78	Marlborough, .	2-98	79	122	Montague, .	2-98
160	74	Chester, .	2-98	45	123	Monterey, .	2-98
184	75	Southborough, .	2-98	154	124	South Hadley, .	2-98
120	76	Worcester, .	2-98	77	125	Clinton, .	2-98
293	77	Monroe, .	2-98	87	126	Nahant, .	2-98
44	78	Barnstable, .	2-98	100	127	Northampton, .	2-98
72	79	South Reading, .	2-98	90	128	Townsend, .	2-98
75	80	Upton, .	2-98	84	129	Belchertown, .	2-98
78	81	Westhampton, .	2-98	202	130	Hubbardston, .	2-98
70	82	Ludlow, .	2-98	86	131	Methuen, .	2-98
102	83	Fitchburg, .	2-98	118	132	Saugus, .	2-98
139	84	Wrentham, .	2-98	146	133	Framingham, .	2-98
107	85	Templeton, .	2-98	140	134	Paxton, .	2-98
198	86	Westminster, .	2-98	182	135	Lexington, .	2-98
57	87	Danvers, .	2-98	122	136	Bedford, .	2-98
179	88	Williamstown, .	2-98	99	137	Walpole, .	2-98
51	89	Heath, .	2-98	98	138	E. Bridgewater, .	2-98
82	90	Newburyport, .	2-98	188	139	Oxford, .	2-98
215	91	Tyngsborough, .	2-98	147	140	Windsor, .	2-98
52	92	Ashland, .	2-98	99	141	Plympton, .	2-98
157	93	Clarksburg, .	2-98	100	142	Tisbury, .	2-98
94	94	Manchester, .	2-98	101	143	Goshen, .	2-98
54	95	Sandwich, .	2-98	206	144	Wayland, .	2-98
289	96	Adams, .	2-98	142	145	Acton, .	2-98
136	97	Amesbury, .	2-98	159	146	Lunenburg, .	2-98
68	98	Douglas, .	2-98	195	147	Pembroke, .	2-98
183	99	Granby, .	2-98	211	148	Mansfield, .	2-98
56	100	New Salem, .	2-97	180	149	Winchendon, .	2-98
59	101	Wales, .	2-95	145	150	Dighton, .	2-98
65	102	Cummington, .	2-92	105	151	Otis, .	2-98
138	103	Medway, .	2-92	106	152	Ashby, .	2-98
115	104	Lawrence, .	2-91	171	153	Salem, .	2-98
155	105	Blackstone, .	2-90	164	154	Gardner, .	2-98
66	106	Dana, .	2-89	172	155	Ashburnham, .	2-98
42	107	Erving, .	2-89	161	156	Beverly, .	2-98
258	108	Rehoboth, .	2-88	110	157	Concord, .	2-98
137	109	Lowell, .	2-86	111	158	Fairhaven, .	2-98
197	110	Savoy, .	2-85	257	159	Lakeville, .	2-98
182	111	West Newbury, .	2-85	114	160	Becket, .	2-98
109	112	Braintree, .	2-84	130	161	Bolton, .	2-98
71	113	Wareham, .	2-83	100	162	Plainfield, .	2-98
243	114	Conway, .	2-82	207	163	Attleborough, .	2-98
194	115	Spencer, .	2-82	110	164	Holden, .	2-98
178	116	Palmer, .	2-79	116	165	N. Marlborough, .	2-98
135	117	Randolph, .	2-79	58	166	Orange, .	2-98
117	118	Leicester, .	2-78	144	167	Swansea, .	2-98
184	119	Dorchester, .	2-76	152	168	Buckland, .	2-98

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2

A GRADUATED TABLE—SECOND SERIES.

The different Counties in the State numerically arranged, according to the Percentage of their taxable property, appropriated for the support of Public Schools, for the year 1866-7.

For 1866-7.	COUNTIES.	Percentage of Valuation appropriated to Public Schools—equivalent to mills and hundredths of mill.	Amount of money raised by taxes for the support of Public Schools.	Income of Surplus Revenue, and of similar funds, appropriated for Public Schools.	TOTAL.	Valuation of 1866.	Amount contributed for board and fuel.
For 1866-7.	NANTUCKET.	\$.003-95	\$8,500 00	-	\$8,500 00	\$2,152,568 00	-
1	Barnstable,	3-06	43,725 00	-	43,725 00	14,276,198 00	\$1,133 37
2	Middlesex,	3-05	473,535 64	-	473,535 64	155,324,723 00	548 75
3	Hampden,	2-80	96,041 00	\$103 10	96,104 10	33,253,177 00	5,482 75
4	Essex,	2-89	259,613 02	1,214 45	260,827 47	90,393,487 00	820 00
5	Worcester,	2-80	225,730 51	962 62	226,693 13	80,857,766 00	1,051 87
6	Norfolk,	2-78	263,414 60	678 03	264,092 63	95,097,794 00	695 00
7	Plymouth,	2-67	74,701 38	-	74,701 38	27,932,058 00	1,006 74
8	Franklin,	2-62	33,889 17	241 94	34,131 11	13,048,120 00	5,162 26
9	Hampshire,	2-58	52,698 45	236 98	52,935 43	20,510,994 00	4,993 56
10	Berkshire,	2-15	59,546 00	642 52	60,188 52	27,987,444 00	9,925 90
11	Bristol,	2-15	127,651 19	264 00	127,915 19	59,464,668 00	1,538 00
12	Dukes,	2-11	4,600 00	-	4,600 00	2,183,975 00	12 00
13	Suffolk,	1-63	632,000 00	-	632,000 00	387,276,700 00	-
14							
AGGREGATE FOR THE STATE.							
14 Counties,		\$.002-34	\$2,355,505 06	\$4,443 64	\$2,359,949 60	\$1,000,709,652 00	\$32,370 20

ties according to their Appropriations, including Voluntary Contributions.

rically arranged, according to the percentage of their Public Schools, voluntary contributions of board and um raised by tax and to the income of the Surplus in the previous Table, the order of precedence will

COUNTIES.	Percentage of Valuation equivalent to mills and hundredths of mills.
.	3-003-95
.	3-14
.	3-05
.	3-05
.	3-01
.	2-89
.	2-82
.	2-82
.	2-78
.	2-71
.	2-51
.	2-18
.	2-11
.	1-68
.	3-002-87

GRADUATED TABLES—THIRD SERIES.

The following Table exhibits the ratio of the mean average attendance in each town to the whole number of children between 5 and 15 according to the returns. The mean average is found by adding the average attendance in Summer to the average attendance in Winter, and dividing the amount by 2. The fraction (five-tenths) when it occurs in dividing by 2, is reckoned, but is not expressed in the column giving the mean average. In some cases the true mean average is not obtained by this process, for reasons peculiar to the schools of some towns. In such cases school committees were requested to indicate in their returns the true mean average, that their result may be inserted in the Table.

The ratio is expressed in decimals, continued to four figures, the first two of which are separated from the last two by a point, as only the two former are essential to denote the real per cent. Yet the ratios of many towns are so nearly equal, or the difference is so small a fraction, that the first two decimals, with the appropriate mathematical sign appended, indicate no distinction. The continuation of the decimals, therefore, is simply to indicate a priority in cases where, without such continuation, the ratios would appear to be precisely similar.

In several cases the ratio of attendance exhibited in the Table is over 100 per cent. These results, supposing the registers to have been properly kept, and the returns correctly made, are to be thus explained:—the mean average attendance upon all Public Schools, being compared with the whole number of children in the town between 5 and 15, the result may be over 100 per cent., because the attendance of children under 5 and over 15, may more than compensate for the absence of children between those ages.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
67	Townsend, .	359	303	.84-54	115	Monroe, .	39	31	.79-49
68	Mansfield, .	424	358	.84-43	116	Ashburnham, .	461	366	.79-40
69	Lynnfield, .	137	115	.84-31	117	Dennis, .	813	645	.79-34
70	Stoneham, .	587	494	.84-24	118	Gill, .	128	101	.79-30
71	Cummington, .	238	200	.84-24	119	W. Brookfield, .	368	291	.79-21
72	Frammingham, .	780	656	.84-10	120	Chelsea, .	3,320	2,629	.79-20
73	Franklin, .	493	413	.83-87	121	Amesbury, .	858	679	.79-19
74	Sudbury, .	329	275	.83-74	122	Lincoln, .	146	115	.79-11
75	Orleans, .	810	259	.83-71	123	Rochester, .	200	158	.79-00
76	Rutland, .	235	196	.83-62	124	Andover, .	988	779	.78-85
77	Gloucester, .	2,647	2,202	.83-19	125	Sherborn, .	210	165	.78-81
78	Plymouth, .	1,263	1,049	.83-06	126	Leicester, .	493	388	.78-70
79	Ashfield, .	259	215	.83-01	127	Deerfield, .	674	530	.78-64
80	Harvard, .	278	230	.82-91	128	Stow, .	332	261	.78-61
81	Yarmouth, .	455	377	.82-86	129	Leverett, .	189	148	.78-57
82	Beverly, .	1,057	875	.82-78	130	Dighton, .	321	252	.78-50
83	Wenham, .	194	160	.82-73	131	Pelham, .	150	117	.78-33
84	Watertown, .	711	586	.82-49	132	Stoughton, .	1,152	902	.78-30
85	Conway, .	330	272	.82-42	133	W. Newbury, .	435	340	.78-28
86	Chilmark, .	88	72	.82-39	134	Edgartown, .	318	248	.77-99
87	Newton, .	2,022	1,665	.82-37	135	Woburn, .	1,618	1,261	.77-94
88	Charlestown, .	5,184	4,248	.81-94	136	Winchester, .	482	374	.77-70
89	Petersham, .	263	215	.81-94	137	Scituate, .	446	346	.77-69
90	Gardner, .	561	459	.81-91	138	Hanson, .	244	189	.77-66
91	Medford, .	1,182	967	.81-81	139	Medway, .	676	525	.77-66
92	Milton, .	505	413	.81-78	140	Westboro', .	630	489	.77-62
93	Rowe, .	184	109	.81-72	141	Dover, .	125	97	.77-60
94	Lexington, .	437	357	.81-70	142	Ware, .	736	571	.77-58
95	Worthington, .	207	169	.81-64	143	E. Bridgewater, .	653	503	.77-11
96	Amherst, .	637	520	.81-63	144	Granby, .	194	149	.77-06
97	Hadley, .	403	323	.81-39	145	Swansea, .	255	196	.77-06
98	Sunderland, .	182	148	.81-32	146	Ipswich, .	588	453	.77-04
99	Bernardston, .	171	139	.81-29	147	Hamilton, .	123	94	.76-83
100	Montague, .	366	296	.81-01	148	Methuen, .	473	363	.76-74
101	Reading, .	598	484	.80-94	149	Provincetown, .	719	551	.76-63
102	Raynham, .	322	260	.80-90	150	Billerica, .	327	250	.76-61
103	Goshen, .	83	67	.80-72	151	Carver, .	181	138	.76-52
104	Boxford, .	207	167	.80-68	152	Danvers, .	1,201	919	.76-52
105	Greenwich, .	123	99	.80-49	153	Brimfield, .	236	180	.76-48
106	Somerville, .	2,159	1,737	.80-48	154	Shutesbury, .	174	133	.76-44
107	Belchertown, .	519	417	.80-35	155	Bellingham, .	265	202	.76-42
108	N. Braintree, .	158	126	.80-06	156	Sturbridge, .	377	288	.76-40
109	Malden, .	1,605	1,282	.79-91	157	Bedford, .	154	117	.76-30
110	Wellfleet, .	501	400	.79-84	158	Savoy, .	194	148	.76-29
111	Berlin, .	215	171	.79-77	159	S. Hadley, .	499	380	.76-25
112	Dorchester, .	2,129	1,696	.79-66	160	Athol, .	589	449	.76-23
113	Easton, .	688	547	.79-58	161	Concord, .	458	349	.76-20
114	Quincy, .	1,512	1,202	.79-53	162	Marshfield, .	380	289	.76-18

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.			TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
259	No. Chelsea,	179	121	.67-88	298	Mattapoisett,	277	171	.61-78
260	Springfield,	3,846	2,606	.67-76	299	Ludlow,	250	154	.61-80
261	Alford,	65	44	.67-69	300	N. Marlboro',	373	229	.61-53
262	Northampt'n,	1,599	1,081	.67-60	301	Sandwich,	942	578	.61-41
263	Monterey,	154	108	.67-21	302	N. Ashford,	44	27	.61-36
264	Bridge water,	746	500	.67-09	303	Huntington,	245	150	.61-22
265	Williamsb'rg,	480	321	.66-87	304	Topsfield,	255	154	.60-59
266	Wrentham,	619	418	.66-80	305	Blackstone,	1,094	656	.60-01
267	Cambridge,	7,213	4,807	.66-65	306	Hudson,	357	214	.59-94
268	Pittsfield,	1,916	1,276	.66-42	307	Dartmouth,	730	437	.59-93
269	Auburn,	242	160	.66-32	308	Newburyp't,	2,994	1,788	.59-74
270	Salisbury,	756	500	.66-20	309	Brewster,	298	178	.59-73
271	Palmer,	711	467	.65-75	310	Burlington,	113	66	.58-41
272	Montgomery,	80	52	.65-02	311	Greveland,	333	194	.58-26
273	Bradford,	836	510	.65-33	312	Granville,	319	181	.56-90
274	Middlefield,	160	104	.65-31	313	Hull,	44	25	.56-82
275	Cohasset,	420	274	.65-24	314	Williamst'n,	572	325	.56-82
276	Attleboro',	1,364	857	.65-07	315	Webster,	700	389	.55-64
277	So. Scituate,	323	210	.65-02	316	Lee,	597	537	.54-46
278	Taunton,	3,377	2,193	.64-95	317	Lanesboro',	259	141	.54-44
279	Peru,	95	61	.64-74	318	Easthampt'n,	741	389	.52-50
280	N. Andover,	505	326	.64-65	319	Lawrence,	4,026	2,097	.52-09
281	Sutton,	547	351	.64-26	320	Holyoke,	1,321	680	.51-51
282	Charlemont,	288	152	.63-87	321	Dudley,	524	269	.51-34
283	Milford,	2,580	1,615	.63-55	322	Fall River,	4,330	2,216	.51-19
284	Hingham,	765	488	.63-79	323	Clarksburg,	189	70	.50-36
285	Westford,	850	222	.63-57	324	Lenox,	317	157	.49-53
286	Westfield,	1,116	709	.63-53	325	Sheffield,	538	262	.48-70
287	Richmond,	210	133	.63-33	326	Gt. Barrington,	980	438	.47-15
288	Hancock,	200	126	.63-25	327	Salem,	4,809	2,259	.46-97
289	Buckland,	437	276	.63-16	328	Cheshire,	376	173	.46-01
290	Dalton,	278	175	.63-13	329	Southbridge,	1,064	489	.45-96
291	Southampt'n,	258	162	.62-98	330	Tolland,	117	67	.45-58
292	Sandisfield,	365	229	.62-88	331	Adams,	2,172	956	.44-01
293	Greenfield,	673	423	.62-85	332	Gosnold,	19	8	.42-11
294	Newbury,	272	178	.62-23	333	Mt. Washing'n	11	32	.39-51
295	Otis,	217	135	.62-21	334	W. Stockbr'ge,	572	185	.32-34
296	Randolph,	1,451	902	.62-20	335	Washington,	215	67	.31-40
297	Millbury,	883	546	.61-33		Marshpee,	68	37	.54-41

GRADUATED TABLES—THIRD SERIES.

Table, in which all the Towns in the respective Counties in the State are numerically arranged, according to the mean average attendance of their children upon the Public Schools, for the year 1866-7.

[For an explanation of the principle on which these Tables are constructed, see ante p. xc.]

SUFFOLK COUNTY.

TOWNS.				TOWNS.			
	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		No. of children between 5 and 15 years of age in each town.	Mean average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1 WINTHROP,	124	105	.85-08	3 Boston,	35235	26092	.74-07
2 Chelsea,	3,320	2,629	.79-20	4 No. Chelsea,	179	121	.67-88

ESSEX COUNTY.

1 ROCKPORT,	683	802	1.17-49	18 Manchester,	383	290	.75-72
2 Georgetown,	418	424	1.01-44	19 Middleton,	212	157	.74-29
3 Nahant,	73	66	.91-09	20 Marblehead,	1,438	1,066	.74-17
4 Essex,	337	302	.89-61	21 Rowley,	261	193	.74-14
5 Swampscott,	321	279	.87-07	22 Saugus,	436	328	.74-08
6 Lynnfield,	137	115	.84-31	23 So. Danvers,	1,401	980	.69-99
7 Gloucester,	2,647	2,202	.83-19	24 Haverhill,	2,029	1,415	.69-76
8 Beverly,	1,057	875	.82-78	25 Lynn,	4,592	3,140	.68-89
9 Wenham,	194	160	.82-73	26 Salisbury,	756	500	.66-20
10 Boxford,	207	167	.80-68	27 Bradford,	336	219	.65-33
11 Amesbury,	858	679	.79-19	28 N. Andover,	505	326	.64-65
12 Andover,	988	779	.78-85	29 Newbury,	278	173	.62-23
13 W. Newbury,	435	340	.78-28	30 Topsfield,	255	154	.60-59
14 Ipswich,	588	453	.77-04	31 Newburypt,	2,994	1,788	.59-74
15 Hamilton,	128	94	.76-83	32 Groveland,	388	194	.58-26
16 Methuen,	473	363	.76-74	33 Lawrence,	4,026	2,097	.52-09
17 Danvers,	1,201	919	.76-52	34 Salem,	4,809	2,259	.46-97

MIDDLESEX COUNTY.

TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
	820	1.20-80		28 Stow, .	832	261	.76-61
	189	.98-70		29 Woburn, .	1,618	1,261	.77-94
	179	.97-03		30 Winchester, .	482	374	.77-70
	114	.95-73		31 Billerica, .	327	250	.76-61
	285	.95-64		32 Bedford, .	154	117	.76-30
	1,106	.94-98		33 Concord, .	458	349	.76-20
	84	.92-80		34 Brighton, .	1,007	824	.75-41
	217	.89-70		35 Chelmsford, .	1,008	871	.75-25
	90	.88-23		36 Holliston, .	761	572	.75-16
	195	.87-28		37 Wayland, .	238	178	.74-79
	118	.86-92		38 Melrose, .	626	468	.74-76
	870	.86-36		39 Lowell, .	5,978	4,452	.74-47
	453	.85-42		40 Ashland, .	355	264	.74-37
	308	.84-54		41 Shirley, .	314	233	.74-20
	494	.81-24		42 N. Reading, .	217	160	.73-96
	656	.84-10		43 So. Reading, .	1,000	505	.73-26
	275	.83-74		44 Wilmington, .	194	141	.72-94
	590	.82-49		45 Natick, .	1,178	854	.72-50
	1,665	.82-37		46 Marlborough, .	1,358	977	.71-98
	4,248	.81-94		47 Dunstable, .	83	58	.70-48
	967	.81-81		48 Tewksbury, .	1,770	194	.69-53
	557	.81-70		49 Groton, .	712	466	.68-83
	484	.80-94		50 Cambridge, .	7,213	4,807	.66-65
	1,787	.80-48		51 Westford, .	350	222	.63-57
	1,282	.79-91		52 Hudson, .	357	214	.60-94
	115	.79-11		53 Burlington, .	113	66	.58-41
	165	.78-81					

WORCESTER COUNTY.

1 NORTHBORO'	307	358	1.16-81	14 Barre, .	511	455	.89-04
2 Oakham, .	152	167	1.09-87	15 Royalston, .	298	261	.87-75
3 Shrewsbury, .	315	340	1.08-09	16 Spencer, .	703	615	.87-48
4 Boylston, .	152	151	.99-34	17 Templeton, .	480	418	.87-08
5 Sterling, .	282	277	.98-40	18 Charlton, .	385	335	.87-01
6 Paxton, .	137	129	.94-16	19 Westminster, .	371	321	.86-52
7 Lunenburg, .	192	179	.93-28	20 Holden, .	358	306	.85-47
8 Upton, .	352	324	.92-03	21 Southboro', .	333	282	.84-83
9 Hubbardston, .	320	294	.92-08	22 Brookfield, .	428	363	.84-81
10 Leominster, .	626	573	.91-61	23 Rutland, .	235	196	.83-62
11 Princeton, .	247	221	.89-47	24 Harvard, .	278	230	.82-91
12 Dana, .	174	155	.89-37	25 Petersham, .	263	215	.81-94
13 Phillipston, .	137	122	.89-05	26 Gardner, .	561	459	.81-91

WORCESTER COUNTY—CONTINUED.

TOWNS.	No of children between 5 and 16 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 16, expressed in decimals.	TOWNS.	No. of children between 5 and 16 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 16, expressed in decimals.
N. Braintree,	158	126	.80-08	44 Clinton,	808	588	.72-77
Berlin,	215	171	.79-77	45 Hardwick,	870	268	.72-57
Ashburnham,	461	366	.79-40	46 Grafton,	944	681	.72-14
N. Brookfield,	368	291	.79-21	47 N. Brookfield,	557	401	.72-08
Leicester,	493	388	.78-70	48 Worcester,	6,780	4,151	.71-23
Westboro',	630	489	.77-62	49 W. Boylston,	497	349	.70-22
Sturbridge,	377	288	.76-40	50 Lancaster,	831	231	.69-79
Athol,	589	449	.76-23	51 Warren,	425	291	.68-50
Northbridge,	581	442	.76-08	52 Auburn,	242	160	.66-32
Douglas,	516	391	.75-87	53 Sutton,	547	351	.64-26
Vinchendon,	548	414	.75-64	54 Milford,	2,530	1,615	.63-83
Mendon,	247	186	.75-30	55 Millbury,	883	546	.61-83
Fitchburg,	1,772	1,326	.74-86	56 Blackstone,	1,094	656	.60-01
Bolton,	326	244	.74-85	57 Webster,	700	389	.55-64
Oxford,	569	416	.73-11	58 Dudley,	524	269	.51-34
Jxbridge,	572	417	.72-99	59 Southbridge,	1,064	489	.45-96

HAMPSHIRE COUNTY.

13 ESTHAM'N,	188	171	1.28-95	13 Granby,	194	110	.77-06
14 Plainfield,	104	111	.90-86	14 So. Hadley,	400	300	.76-25
15 Prescott,	107	91	.85-51	15 Enfield,	198	148	.75-00
16 Summington,	238	200	.84-24	16 Chesterfield,	175	129	.74-00
17 Northampton,	207	169	.81-64	17 Hatfield,	312	222	.71-81
18 Amherst,	637	520	.81-63	18 Northampton,	1,509	1,081	.67-60
19 Hadley,	403	328	.81-39	19 Williamsburg,	480	321	.66-87
20 Goshen,	83	67	.80-72	20 Middlefield,	160	104	.65-31
21 Greenwich,	123	99	.80-49	21 Southampton,	238	102	.62-98
22 Melbortown,	519	417	.80-35	22 Huntington,	245	150	.61-22
23 Pelham,	150	117	.78-33	23 Easthampton,	741	389	.52-50
24 Ware,	720	571	.77-58				

HAMPDEN COUNTY.

6 LANDFORD,	193	185	.96-11	6 Russell,	142	102	.72-18
7 Holland,	84	72	.85-71	7 Wales,	132	95	.71-97
8 Trimfield,	236	180	.76-48	8 Longmeadow,	251	179	.71-37
9 Agawam,	292	221	.75-86	9 Southwick,	260	184	.70-77
10 Wilbraham,	392	288	.73-47	10 W. Spring'ld,	405	286	.70-62

HAMPDEN COUNTY—CONTINUED.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.		TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attendance upon school.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
11	Monson, .	563	395	.70-16	17	Westfield, .	1,116	709	.63-53
12	Chicopee, .	1,888	969	.69-81	18	Ludlow, .	250	154	.61-60
13	Chester, .	303	211	.69-64	19	Granville, .	319	181	.56-90
14	Springfield, .	3,846	2,606	.67-76	20	Holyoke, .	1,321	680	.51-51
15	Palmer, .	711	467	.65-75	21	Tolland, .	147	67	.45-58
16	Montgomery, .	80	52	.65-62					

FRANKLIN COUNTY.

1	WARWICK, .	175	177	1.01-14	14	Gill, .	128	101	.79-30
2	Hawley, .	138	133	.96-88	15	Deerfield, .	674	530	.78-61
3	Erving, .	117	112	.96-15	16	Leverett, .	189	148	.78-57
4	Coleraine, .	344	311	.90-41	17	Shutesbury, .	174	133	.76-44
5	New Salem, .	214	193	.90-19	18	Wendell, .	127	93	.73-62
6	Orange, .	360	308	.85-56	19	Leyden, .	111	81	.72-97
7	Ashfield, .	259	215	.83-01	20	Shelburne, .	304	219	.72-04
8	Conway, .	330	272	.82-42	21	Whately, .	199	139	.69-85
9	Rowe, .	134	109	.81-72	22	Northfield, .	381	262	.68-90
10	Sunderland, .	182	148	.81-32	23	Heath, .	141	96	.68-44
11	Bernardston, .	171	139	.81-29	24	Charlemont, .	238	152	.63-87
12	Montague, .	366	296	.81-01	25	Buckland, .	437	276	.63-16
13	Monroe, .	89	81	.79-49	26	Greenfield, .	673	423	.62-85

BERKSHIRE COUNTY.

1	TYRINGHAM, .	125	112	.90-00	17	Otis, .	217	135	.62-21
2	Becket, .	281	240	.85-59	18	N. Marlboro', .	373	229	.61-53
3	Savoy, .	194	148	.76-29	19	N. Ashford, .	44	27	.61-36
4	Windsor, .	178	131	.73-88	20	Williamst'wn, .	572	325	.56-82
5	Florida, .	194	141	.72-94	21	Lee, .	987	537	.54-46
6	Hinsdale, .	341	239	.70-09	22	Lanesboro', .	253	141	.54-44
7	Stockbridge, .	452	313	.69-25	23	Clarksburg, .	139	70	.50-36
8	Egremont, .	195	134	.68-97	24	Lenox, .	317	157	.49-53
9	Alford, .	65	44	.67-60	25	Sheffield, .	538	262	.48-70
10	Monterey, .	154	103	.67-21	26	G. Barrington, .	930	438	.47-15
11	Pittsfield, .	1,916	1,276	.66-62	27	Cheshire, .	376	173	.46-01
12	Peru, .	95	61	.64-74	28	Adams, .	2,172	956	.44-01
13	Richmond, .	210	133	.63-33	29	Mt. Wash'ton, .	81	32	.39-51
14	Hancock, .	200	126	.63-25	30	W. Stockb'ge, .	572	185	.32-34
15	Dalton, .	278	175	.63-13	31	Washington, .	215	67	.31-40
16	Sandisfield, .	365	229	.62-88					

K COUNTY.

	TOWNS.	No. of children between 5 and 15 years of age in each town.	Mean average attend- ance upon school.	Ratio of attendance to the whole No. of chil- dren between 5 and 15, expressed in decimals.
13	Foxborough,	545	413	.75-87
14	Walpole, .	878	284	.75-26
15	Canton, .	813	603	.74-17
16	Weymouth, .	1,890	1,401	.74-15
17	Dedham, .	1,512	1,094	.72-39
18	Sharon, .	274	192	.70-07
19	Roxbury, .	6,879	4,455	.69-84
20	Braintree, .	854	589	.68-97
21	Wrentham, .	619	413	.66-80
22	Cohasset, .	420	274	.65-24
23	Randolph, .	1,451	902	.62-20

L COUNTY.

11	Somerset, .	420	308	.73-45
12	Fairhaven, .	519	379	.73-03
13	Berkley, .	189	136	.72-22
14	Westport, .	564	400	.71-01
15	Norton, .	853	250	.70-96
16	Attleboro', .	1,364	887	.65-07
17	Taunton, .	3,377	2,193	.64-95
18	Dartmouth, .	730	437	.59-93
19	Fall River, .	4,330	2,216	.51-19

M COUNTY.

14	Middleboro',	980	719	.73-37
15	N. Bridgewater, .	1,523	1,106	.72-62
16	Wareham, .	624	450	.72-20
17	Halifax, .	139	99	.71-22
18	Pembroke, .	803	210	.69-77
19	Hanover, .	830	230	.69-70
20	Lakeville, .	197	136	.69-04
21	Bridgewater, .	746	500	.67-09
22	So. Scituate, .	323	210	.65-02
23	Hingham, .	765	488	.63-79
24	Mattapoisett, .	277	171	.61-73
25	Hull, .	44	25	.56-82

BARNSTABLE COUNTY.

TOWNS.		No. of children between 5 and 15 years of age in each town.	Mean average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.	TOWNS.		No. of children between 5 and 15 years of age in each town.	Mean average attendance upon School.	Ratio of attendance to the whole No. of children between 5 and 15, expressed in decimals.
1	TRURO, .	270	242	.86-74	8	Barnstable, .	1,003	758	.75-62
2	Orleans, .	310	259	.83-71	9	Harwich, .	803	586	.73-04
3	Yarmouth, .	455	377	.82-86	10	Chatham, .	634	452	.71-29
4	Wellfleet, .	501	400	.79-84	11	Falmouth, .	456	315	.69-08
5	Dennis, .	813	645	.79-34	12	Sandwich, .	942	578	.61-41
6	Provincet'wn, .	719	551	.76-63	13	Brewster, .	298	178	.59-73
7	Eastham, .	139	105	.75-90		Marshpee, .	68	37	.54-41

DUKES COUNTY.

1	CHILMARK, .	88	72	.82-39	3	Tisbury, .	350	254	.72-57
2	Edgartown, .	318	243	.77-99	4	Gosnold, .	19	8	.42-11

NANTUCKET COUNTY.

NANTUCKET,	715	640	.89-51
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*If the Counties are numerically arranged, according
NDANCE of their children upon the Public Schools,*

COUNTIES.	Ratio of attendance, &c.
. . . . .	.89-51
. . . . .	.77-41
. . . . .	.77-28
. . . . .	.75-27
. . . . .	.75-16
. . . . .	.74-68
. . . . .	.74-60
. . . . .	.74-59
. . . . .	.74-52
. . . . .	.78-80
. . . . .	.68-72
. . . . .	.67-91
. . . . .	.66-86
. . . . .	.57-26

GE ATTENDANCE FOR THE STATE.

en 5 and 15 years of age in the State,	261,498
.	190,051
whole number of children between 5 and	
16,73

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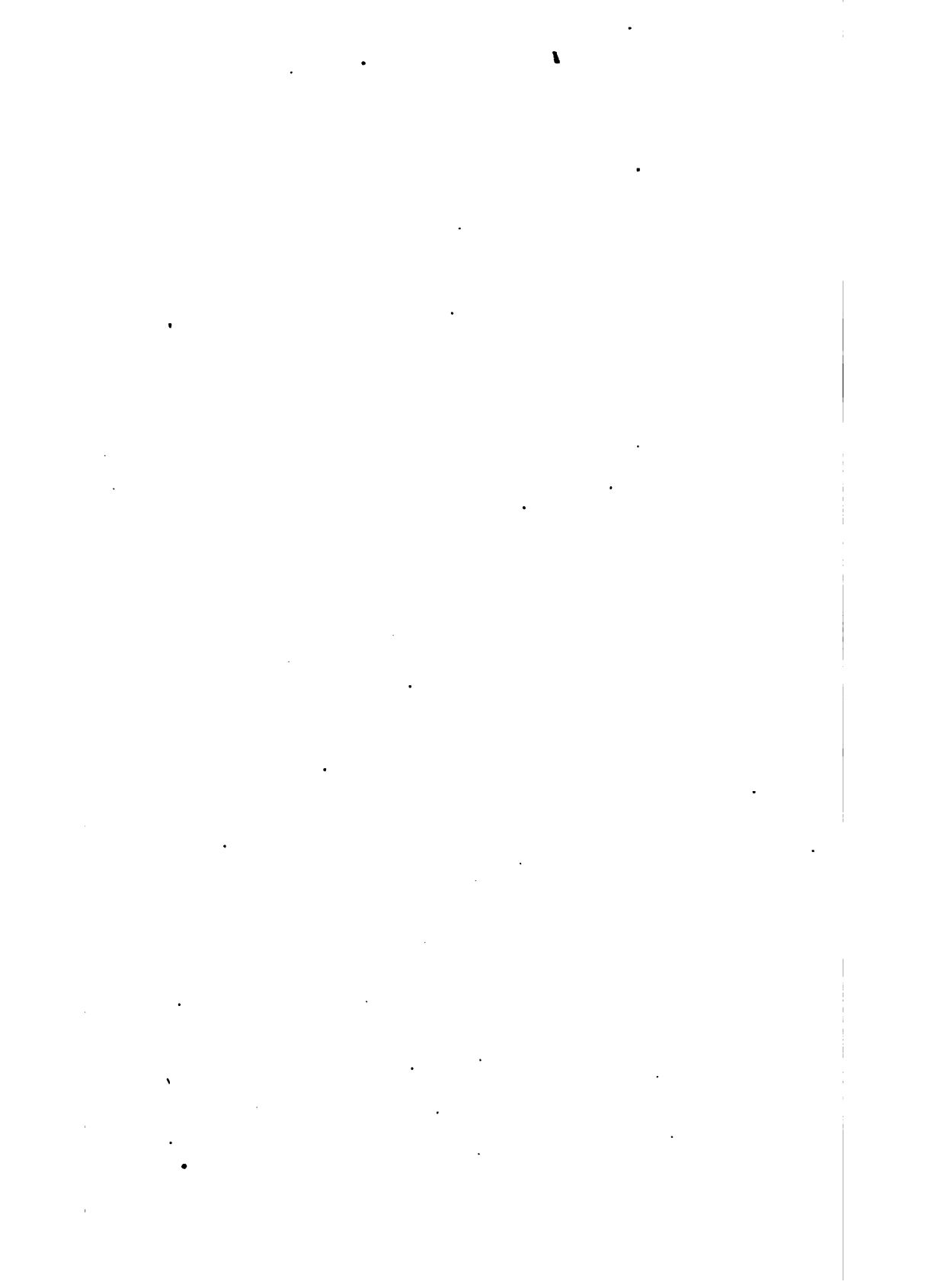
ABSTRACT OF SCHOOL REPORTS.

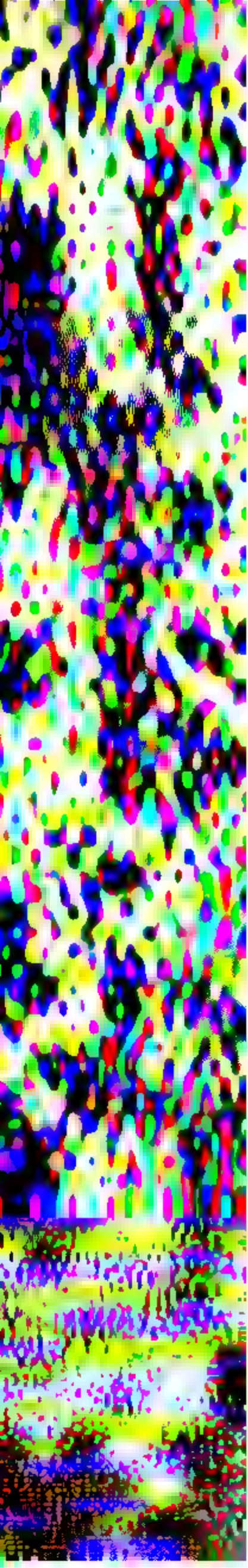
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New York, City. Annual Report of the City Superintendent of Schools, 1866. New York, 1867,	1
—— Report on the System of Popular Education, 1851. New York, 1851,	1
New York, State. Twenty-Fourth Annual Report of the Managers of the State Lunatic Asylum for 1866. Albany, 1867,	1
—— Proceedings of the Republican Union State Convention, Sept. 5, 1866,	1
Norcross, Otis. Inaugural Address, Jan. 7, 1867. Boston, 1867,	1
Norton's Literary and Educational Register for 1854. New York, 1854,	1
Official Army Register for 1864, '66. Washington, 1864-66,	2
Patterson, N. A. Address at the Educational Convention organizing the Tennessee Wesleyan College, Jan. 4, 1867. Nashville, 1867,	1

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for the Blind. Seventeenth, Nineteenth and Annual Report of the Trustees. Cambridge,	3
marks on the Bill to prevent the Marriage of First Degree, in Senate, Dec. 9, 1859. No	1
port of the Board of Health for 1860-66. 161-67. (2 copies of 1866,)	8
ons to Special Sanitary Inspectors, by Order of ealth. Philadelphia, 1865,	1
ourth Annual Report of the Mercantile Library . Philadelphia, 1867. (2 copies,)	2
ogist for the Year 1866-67. Vol. 2. No. 1-4,	1
nty-Fifth Annual Report of the Ministry at ence, 1867,	1
The State House in Boston. Boston, 1865.	2
heories of Dr. S. G. Howe respecting the Edu- Mutes,	1
cational Magazine. Sept.-Nov. 1852. Provi-	3
Inaugural Address, Jan. 7, 1867. Lowell,	1
V. Puissance militaire des États-Unis d'après -65. Paris, 1866,	1
lum of Aberdeen. Medical Report for 1860-64 -65,	5
lum of Montrose. Report for 1864-65. Mont-	2
Annual Report of the Board of Education, 1854. 1854,	1
Report of the Superintendent of Public Schools 6. San Francisco, 1857-66,	3
at of the Condition and Wants of the Public ent. San Francisco, 1866,	1
th and Fourteenth Annual Reports of the Mer- Association. San Francisco, 1866-67,	2
entive Measures or what may be done by the ipation of the Cholera. Philadelphia, 1866,	1
Address at the Dedication of the Soldiers' tockbridge. New York, 1867,	1

PAMPHLETS.

Shattuck, G. O. Closing Argument in Behalf of the Petitioners for an Act restraining the Jamaica Pond Aqueduct Corporation from drawing Water below Low-Water Mark. Boston, 1867,	1
Sheffield Scientific School. Second Annual Report, 1866-67. New Haven, 1867,	1
Shurtleff College. Announcement of the Theological Department, 1865-66. [Upper Alton, 1865],	1
Springfield. Annual Report of the City Library Association for 1867. Springfield, 1867,	1
Squier, E. G. The Volcanoes of Central America. n. p. n. d.,	1
Starr, W. E. Services at the Induction of W. E. Starr as Superintendent of the State Reform School at Westboro', Jan 15, 1857. Boston, 1857,	1
Suggestions upon Naval Reform, 1850. n. p. n. d.,	1
Sumner, Charles. The War System of the Commonwealth of Nations. Boston, 1854,	1
Taunton. First Annual Report of the Trustees of the Public Library, 1867. Taunton, 1867,	1
Tenré, L. Les États américains leurs produits, leur commerce en vue de l'Exposition universelle. Paris, 1867,	1
Toronto. Second Annual Report of the Superintendent of Public Schools, 1860. Toronto, 1861,	1
—— Report of the Past History and Present Condition of the Public Schools. Toronto, 1859,	1
Twombly, A. S. Parting Words to his Friends and Parishioners, Jan. 20, 1867. Albany, 1867,	1
United States. Circular from the Commissioner of Agriculture on the Agricultural and Manufacturing Resources of the United States. Washington, 1862,	1
—— Laws relating to Internal Revenue, in Force Aug. 1, 1866. Washington, 1866,	1
—— Laws relating to Internal Revenue, 1867. Washington, 1867,	1
—— Report of the Librarian of the Library of Congress for 1866. Washington, 1866,	1
—— Catalogue of Additions made to the Library of Congress from Dec. 1, 1865 to Dec. 1, 1866. Washington, 1866,	1
—— Register or Blue Book for 1867. New York, n. d.,	1
United States Naval Observatory. Report on Interoceanic Canals and Railroads between the Atlantic and Pacific Oceans. Washington, 1867,	1

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Massachusetts Railroad Company. Tenth, Fourth Report, 1857-66. Boston, 1858-67, . . .	10
the Life Time of the "Father of American Industry," 1860,	1
Framingham Normal School. No title-page, management of the Boston and Worcester page,	1
First Annual Report of the Board of Schools. Washington, 1866,	1
Reports, 1861-67. Springfield, 1861-67, . . .	7
Report on the Chemical Analysis of Grapes.	1
Sermon preached at Boston in New England, 1836. Morrisania, 1867,	1
in the House of Representatives [Tenn.] Expulsion of Free Negroes from the State.	1
Sermon Sydney. A Lecture. Boston, 1854, Report of the Superintendent of Public . . . Madison, 1867,	1
Catalogues of Coins, Medals, etc.] Roxbury 1862-66,	6
Annual Report of the Free Public Library.	1
Agricultural Society. Transactions for 1866.	1
Asylum. Thirteenth Annual Report.	1
on the Criminals, and a Plan for saving them.	1
of the Class of 1854. Albany, 1867, . . .	1

 276
Received from Officers of the Government.

General Statutes. Boston, 1866,	1
1867. Boston, 1867. (6 copies,)	6
1865. MS.,	1
1866. Boston, 1866. (6 copies,)	6
1867. Boston, 1867. (6 copies,)	6

	VOLUMES.
Documents of the House, 1867. Boston, 1867. (6 copies,) .	12
Public Documents, 1866. Vol. 1-4. Boston, 1867. (5 copies,) .	20
Reports on the Subject of a License Law. Boston, 1867. (6 copies,)	6
Manual for the Use of the General Court, 1867. Boston, 1867, .	1
Annual Report of the Adjutant-General for 1866. Boston, 1867. (2 copies,)	2
Report of the Auditor of Accounts for 1865-66. Boston, 1866-67. (6 copies,)	12
Second and Third Annual Reports of the Board of State Charities, 1866-67. Boston, 1866-67. (6 copies,)	12
Twenty-Fourth Report relating to Births, Marriages and Deaths, 1865. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of the Board of Agriculture, 1865. Boston, 1866. (4 copies,)	4
Fourteenth Annual Report of the Board of Agriculture, 1866. Boston, 1867. (5 copies,)	5
List of Shareholders in the National Banks in the Commonwealth. Boston, 1867. (2 copies,)	2
	<hr/> 102

Pamphlets received from Officers of the Government.

	PAMPHLETS.
Twelfth Annual Report of the Insurance Commissioner, 1866. Boston, 1867. (6 copies,)	12
Annual Report of the Commissioner of Savings Banks, 1866. Boston, 1867,	1
Third-Fifth, Seventh and Eleventh Annual Reports of the Board of Managers of the Association of Banks for the Suppression of Counterfeiting. Boston, 1856-64,	5
Reports of Commissioners on the Hours of Labor. Boston, 1867, .	1
Report of the Treasurer and Receiver-General, 1866. Boston, 1867. (6 copies,)	6
Report of the Surgeon-General, 1866. Boston, 1867. (6 copies,) .	6
Compilation of the Laws regulating Taxation, 1866-67. (2 copies,)	2
Abstract of the Attested Returns of Corporations, 1866. Boston, 1867. . (6 copies,)	6

PAMPHLETS.

Fifteenth Annual Report of the Commissioners on Public Lands, 1866. [Boston, 1867]. (6 copies,)	6
Aggregates of Polls, Property, Taxes, &c., 1866. Boston, 1867. (6 copies,)	6
Abstract of the Returns of Sheriffs, 1866. [Boston, 1867]. (6 copies,)	6
Annual Report of the Sale of Spirituous Liquors, 1866. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of the State Almshouse at Bridgewater, 1866. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of the State Almshouse at Monson, 1866. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of the State Almshouse at Tewksbury, 1866. Boston, 1867. (6 copies,)	6
Nineteenth Annual Report of the Trustees of the School for Idiotic and Feeble-Minded Youth, 1866. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of Rainsford Island Hospital, 1866. Boston, 1867. (6 copies,)	6
Eleventh Annual Report of the State Lunatic Hospital at North- ampton, 1866. Boston, 1867. (6 copies,)	6
Thirteenth Annual Report of the State Lunatic Hospital at Taun- ton, 1866. Boston, 1867. (6 copies,)	6
Thirty-Fourth Annual Report of the State Lunatic Hospital at Worcester, 1866. Boston, 1867. (6 copies,)	6
Twentieth Annual Report of the State Reform School. Boston, 1867. (6 copies,)	6
Annual Report of the Massachusetts State Prison, 1866. Boston, 1867. (6 copies,)	6
Thirty-Fifth Annual Report of the Perkins Institution and Mas- sachusetts Asylum for the Blind, 1866. Boston, 1867. (6 copies,)	6
Eleventh Annual Report of the Trustees of the State Industrial School for Girls, 1866. Boston, 1867. (6 copies,)	6

135
Maps.

Map of Cape Cod Harbor,	1
Plan of the Grand Hotel Branch Railroad. E. Appleton, 1867,	1
Plan of the Proposed Straightening of the Eastern Railroad, North River, Salem. T. W. Pratt, 1867,	1

Plan of the Line of a Proposed Railroad from Gloucester Village to Lanesville, 1867,	1
Plan and Profile of a Proposed Railroad from North Adams to Williamsburg, 1867,	2
Plan of a Proposed Railroad from Hopkinton to Milford. W. F. Ellis, Civil Engineer, 1867,	1
Plan of a Section of the Railroad from Hopkinton to Milford,	1
Plan of the Roxbury Branch Railroad. By E. Appleton,	1
Genealogical Chart of the Dexter Family. By S. C. Newman,	1
Descendants of J. Padelford. [A Genealogical Chart.] By S. C. Newman,	1
Carte statistique de l'instruction primaire en France par J. Manier,	1
	<hr/>
	12

Number of Volumes added to the Library from October 1, 1866, to September 30, 1867.

By Purchase,	615
By Domestic Exchanges,	862
By Foreign Exchanges,	29
By Donation,	118
By Officers of the Government,	102
	<hr/>
	1,226

Pamphlets.

By Purchase,	58
By Domestic Exchanges,	53
By Foreign Exchanges,	292
By Donation,	276
By Officers of the Government,	135
	<hr/>
	814

Number of Maps,	12
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Books Lost or Missing.

	VOLUMES.
Oregon Code of Civil Procedure, 1862,	1
Massachusetts General Court Records. Vol. 5,	1
Massachusetts Special Laws. Vol. 1,	1
Railroad Laws and Charters. Vol. 1,	1

	VOLUMES.
Massachusetts Supreme Court Reports. Allen. Vol. 6, . . .	1
Commentaries on the Criminal Law. Bishop. Vol. 1, . . .	1
Laws of Texas, 1849-50,	1
Arctic Explorations. Kane. Vol. 1,	1
Frederick the Great. Carlyle. Vol. 1,	1
Medical Biography. Thacher,	1
Manual of Physiology. Carpenter,	1
	<hr/>
	11

To		
Feb. 21,	-Foreign Reviews,	\$15 00
Mar. 1,	12,	5 40
11,	"	1 84
12,	12,	98 00
12,	"	9 00
13,	"	2 00
14,	"	10 00
14,	ommanders,	4 50
15,	Collections of Mass. Historical Society, Vol. 10, 2d Series,	2 00
2, Apr.	J. L. Fairbanks' bill—Binding and Stationery,	134 80
2,	Johnson's Atlas,	17 50
8,	Lectures and Reports, by Horace Mann,	3 00
11,	Little, Brown & Co.'s bill—Books,	96 00
11,	William H. Piner & Co.'s bill—Books,	27 69
15,	"	70 00
17,	"	6 00
19,	Brothers & Co., and exchange,	316 80
19,	"	2 00
May 6,	Wiggin & Lunt's bill—Books,	118 80
13,	American Journal of Insanity, Vol. 24,	4 00
18,	Numbers of Historical Magazine,	8 00
15,	Banker's Magazine to June, 1887,	5 00
18,	T. & J. W. Johnson's bill—Law Books,	69 00
24,	I. Smith Homans' bill—Books,	8 40
24,	"	6 00
June 7,	"	5 50
10,	"	2 00
22,	"	18 43
22,	Cards,	38 91
	Amount carried forward,	\$1,605 86
	Amount carried forward,	\$2,728 29

The account rendered in the previous pages shows that for the year covered by this Report, the amount received by the trustees for the increase of the library was as follows:—

Balance on hand October 1, 1866,	\$419 74
Balance of appropriation for 1866, not drawn, . .	800 00
Annual appropriation, in part, for 1867, . . .	1,500 00
Proceeds of duplicates sold,	3 55
	<hr/> \$2,723 29

Expenditures for the year—

Books, pamphlets and periodicals,	\$2,276 51
Binding and stationery,	233 17
Library cards for catalogues,	33 91
Freight, express charges, postage, &c., exclu- sive of exchange and commissions,	56 21
. Balance to new account,	123 49
	<hr/> \$2,723 29

The means remaining at the disposal of the trustees for current use, or till the next appropriation will be available, is the balance on hand, (\$123.49), and the balance of the last annual appropriation, (\$800), not yet drawn from the State treasury, making a total of \$923.49, for expenditures during several months to come.

A larger number of foreign works has been imported for the library than in any previous year. They were mostly recent publications, many of which had not been reprinted in this country, and were purchased by the agent in London, whose drafts in payment, through Baring Brothers & Co. have been honored to the amount of \$1,004.71, including cost of exchange and commissions. As foreign books imported for public libraries are exempted from the payment of duties, and as the expense of reprinting them in this country is enhanced by the increased cost of labor and materials, it has been a matter of economy to import foreign works rather than to purchase American editions of the same works if executed in a similar style of excellence.

Additions made during the year are as follows:—

	VOLUMES.
By purchase,	615
domestic exchanges,	362
foreign exchanges,	29
donations,	118
officers of the government,	102
	<hr/>
Whole number,	1,226
	<hr/>
	PAMPHLETS.
By purchase,	58
domestic exchanges,	53
foreign exchanges,	292
donations,	276
officers of the government,	135
	<hr/>
Whole number,	814

Donations have been made to the library by the following persons:—Henry Wilson, Charles Sumner, Robert C. Winthrop, Louis Agassiz, Edward Jarvis, Gen. Barnard, Admiral Davis, Joseph White, Paul A. Chadbourne, Oliver Warner, H. T. Parker, London; O. Blunt, Supervisor of N. Y.; John Clark, A. G. Cooledge, T. C. Amory, Emory Washburn, W. I. Loomis, David Pulsifer, Mrs. Horace Mann, L. L. Abbot, W. E. Woodward, George Bemis, Charles Brooks and by several others; also by the Smithsonian Institution.

Catalogues, reports, &c., have been received from various libraries, associations, railroad corporations, &c.

Valuable books and pamphlets have also been received by exchanges with the Buffalo Historical Society and with the Chicago Historical Society.

The States recently insurgent have all resumed inter-state exchanges, except Florida. State publications have been received from all the other States in the Union and from the Territories, within the year, except from Mississippi, Kansas, Michigan, Wisconsin, Minnesota, Colorado, Washington, New Mexico and Utah. Some of the States have only a biennial session of their legislature, and therefore their Laws and Documents are not received annually.

The extensive changes made during the summer and autumn in the interior arrangements of the State House, rendered it

necessary to close almost the entire edifice to the public. Admission was allowed only to those having business with the departments which had not already been temporarily transferred to other buildings. These changes, and the restrictions, and obstacles to access occasioned by them, have interrupted the regular operations and free use of the library. It has, however, been open every day, and some one has been in attendance daily for the transaction of special business, except for a short time, when access was wholly obstructed and even dangerous. Facilities for consulting the books have been afforded in all cases when admission could be had, or was not prevented by the operations of the workmen. On account of the temporary removal of the ordinary means of entrance, and the great and constant annoyance arising from the presence and proximity of various mechanical labors, it was found expedient for the assistants to perform a large part of their clerical duties at their places of residence. Thus the amount of work usually done in the library has been performed, except that arising from attendance on visitors. The usual additions by exchange and purchase have been received, and entered, catalogues kept complete, exchanges continued and acknowledged, the regular correspondence maintained, and the required annual reports prepared.

One pleasant result of the changes and annoyances above referred to, is the improved and beautiful appearance of the library-room, through the judgment and taste of the commissioners, and the skill of the mechanics employed.

Respectfully submitted.

JOSEPH WHITE, *Librarian.*

OCTOBER 15, 1867.

PUBLIC DOCUMENT.....

FIFTEENTH ANNUAL REPORT

OF THE

SECRETARY

OF THE

Massachusetts Board of Agriculture

TOGETHER WITH

REPORTS OF COMMITTEES

APPOINTED TO VISIT THE COUNTY SOCIETIES:

WITH AN APPENDIX

CONTAINING AN ABSTRACT OF THE

FINANCES OF THE COUNTY SOCIETIES

FOR

1867.

BOSTON:

WRIGHT & POTTER, STATE PRINTERS

No. 4 SPRING LANE.

1868.

STATE BOARD OF AGRICULTURE.

1868.

MEMBERS EX OFFICIO.

HIS EXCELLENCY ALEXANDER H. BULLOCK.
 HIS HONOR WILLIAM CLAFLIN.
 HON. OLIVER WARNER, *Secretary of the Commonwealth.*
 WILLIAM S. CLARK, *Pres. Mass. Agricultural College.*

APPOINTED BY THE GOVERNOR AND COUNCIL.

	Term
EPHRAIM W. BULL, <i>of Concord,</i>
LOUIS AGASSIZ, <i>of Cambridge,</i>
MARSHALL P. WILDER, <i>of Dorchester,</i>

CHOSEN BY THE COUNTY SOCIETIES.

Massachusetts,	. . .	LEVERETT SALTONSTALL, <i>of Newton,</i>
Essex,	. . .	GEORGE B. LORING, <i>of Salem,</i>
Middlesex,	. . .	JOHN B. MOORE, <i>of Concord,</i>
Middlesex North,	. . .	ASA CLEMENT, <i>of Dracut,</i>
Middlesex South,	. . .	JOHN JOHNSON, JR., <i>of Framingham,</i>
Worcester,	. . .	THOMAS W. WARD, <i>of Shrewsbury,</i>
Worcester West,	. . .	COURTLAND SANDERSON, <i>of Phillips</i>
Worcester North,	. . .	THOMAS BILLINGS, <i>of Lunenburg,</i>
Worcester North-West,	. . .	CHARLES C. BASSETT, <i>of Athol,</i>
Worcester South,	. . .	NEWTON S. HUBBARD, <i>of Brimfield,</i>
Worcester South-East,	. . .	WILLIAM KNOWLTON, <i>of Upton,</i>
Hampshire, Franklin and Hampden,		H. S. PORTER, <i>of Hatfield,</i>
Hampshire,	. . .	JOHN A. MORTON, <i>of Hadley,</i>
Highland,	. . .	MONROE F. WATKINS, <i>of Hinsdale,</i>
Hampden,	. . .	WILLIAM BIRNIE, <i>of Springfield,</i>
Hampden East,	. . .	H. S. WARD, <i>of Monson,</i>
Union,	. . .	E. W. BOISE, <i>of Blandford,</i>
Franklin,	. . .	IMLA K. BROWN, <i>of Bernardston,</i>
Berkshire,	. . .	ALEXANDER HYDE, <i>of Lee,</i>
Housac Valley,	. . .	JOHN L. COLE, <i>of Williamstown,</i>
Housatonic,	. . .	T. D. THATCHER, <i>of Lee,</i>
Norfolk,	. . .	ELIPHALET STONE, <i>of Dedham,</i>
Hingham,	. . .	ALBERT FEARING, <i>of Hingham,</i>
Bristol,	. . .	AVERY P. SLADE, <i>of Somerset,</i>
Bristol Central,	. . .	NATHAN DUFFEE, <i>of Fall River,</i>
Plymouth,	. . .	CHARLES G. DAVIS, <i>of Plymouth,</i>
Marshfield,	. . .	GEORGE M. BAKER, <i>of Marshfield,</i>
Barnstable,	. . .	GEORGE A. KING, <i>of Barnstable,</i>
Nantucket,	. . .	JAMES THOMPSON, <i>of Nantucket,</i>
Martha's Vineyard,	. . .	JOHN PIERCE, <i>of Edgartown,</i>

CHARLES L. FLINT, *Sec*

FIFTEENTH ANNUAL REPORT
OF THE
SECRETARY
OF THE
BOARD OF AGRICULTURE.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The meteorological features of the past year have been somewhat remarkable. They serve to show how powerful an influence the character of the weather, especially that of the growing months, has upon the practical work and the prosperity of the farm. The variations in the seasons, the droughts of one summer, and the rains of another, constitute one of the obstacles against which the farmer has to contend and introduce elements of uncertainty in his calculations which do not exist in a more fixed and uniform climate.

In a season of unparalleled vegetable growth, the hay crop, so essential to a northern latitude, is, of course, abundant. This, under ordinary circumstances, would reduce the price of that important staple ; but the barns throughout the State had become so completely emptied the last spring that the price of this, as well as other feeding substances, has been strongly maintained.

The cost of farm labor ranged high throughout the early part of the year, while the frequent interruptions to work made it more than ordinarily difficult to carry on permanent improvements without expenditures which the results would not justify.

It is now confidently believed that the disease commonly known as pleuro-pneumonia has been completely eradicated; and it is a subject for congratulation that the efficient efforts on the part of the Commonwealth have been attended with success, so far as we can judge at the present time. The recent experience in Great Britain in the treatment of this disease, as well as of the cattle plague—both dangerous contagious diseases—has been sufficient to satisfy every candid, thinking mind in our own State that our efforts and expenditures to purchase immunity were well-timed and judicious. The Commissioners now tender their resignation, and the following is understood to be their

FINAL REPORT.

To the Senate and House of Representatives of the Commonwealth of Massachusetts.

The Board of Commissioners on Contagious Diseases among Cattle, which has been continued in accordance with the wish of His Excellency the Governor during the year past, the object being to guard against the introduction of the cattle plague, (rinderpest,) which has caused so much loss in Great Britain during the past three years, or the possible breaking out and spread of the disease called "pleuro-pneumonia," which has heretofore prevailed to an alarming extent in this Commonwealth, congratulate the people upon the exemption from the former, and the probable extinction of the latter, from our herds.

From the latest reports it appears, through the energetic action of the English government the rinderpest is nearly "stamped out;" consequently the fear that it would be brought to this country is lessened. Should, however, the calamity occur, it is to be hoped that the same rigorous measures adopted by Massachusetts to extirpate pleuro-pneumonia, and Great Britain the rinderpest, would be executed without delay. These measures, together with the restriction placed upon the importation of cattle by our government, have so far protected us against the rinderpest. The active and timely exertions made in our Commonwealth have saved our herds from the devastation which was so seriously threatened by the pleuro-pneumonia, so that by the expenditure of a very small proportion of the appropriations made in 1864 and 1866, we have now

entire confidence that it is eradicated ; and from what we now know of the nature of the disease, we feel certain that it will not again appear among our herds, unless, as in 1859, imported from beyond our limits.

As the commission has accomplished the work for which it was appointed, in tendering to His Excellency our resignation, we congratulate the people upon the success which has been insured by the prompt action of the State Board of Agriculture, and especially its Secretary, in connection with the legislature, and with the co-operation of many of the leading agriculturists and breeders of stock among our citizens, in eradicating one of the worst forms of contagious disease which has been found among the cattle. And we would at the same time congratulate the breeders of stock that the investigations of scientific men in relation to this, as well as other forms of disease peculiar to animals, is tending in so large a degree to save them and the country from such great losses as they would otherwise inevitably incur.

The Commissioners have been called in several instances during the past year to examine diseased cattle.

In one herd only, and but for a few days, during which three cows died, was there any evidence of a contagious disease found. The character of the disease is unknown, as the animals had been buried before our arrival at the farm.

E. F. THAYER,

CHAS. P. PRESTON,

DECEMBER 30, 1867.

Commissioners.

PUBLIC MEETING OF THE BOARD

AT CONCORD.

The Annual Meeting of the State Board of Agriculture for lectures and discussions, was held in the town hall at Concord, commencing on Tuesday, December 10, and continuing three days. The meeting was called to order on Tuesday, at noon, by Hon. E. W. BULL, of Concord, who said :—

GENTLEMEN,—I find it devolves upon me, as Chairman of the Committee on Meetings, to open the proceedings with what is announced as an “address.” I do not propose to give you a

set address, but a few general remarks upon the great interest of agriculture ; for the address to which we had the honor of listening last year, from Dr. Loring, of Salem, was so exhaustive upon all topics of special interest to the Board, and with regard to the history of the Board, as to leave nothing to be said in those directions. Any *resumé* of the agricultural doings of the country during the last year falls more properly to our Secretary, and will be done so much more efficiently by him, that I do not propose to say anything upon that subject.

I propose to ask your attention, for a few moments, to the history of the Board, and to the agriculture of the State during the sixteen years or more the Board has been in operation. During these years the Board has been organized, and the agriculture of Massachusetts has made a steady advance ; and this advancement has been due, in part, at least, to the constant efforts of the Board to promote and improve the art of farming. It is emphatically a representative body, composed almost wholly of delegates from the agricultural societies of the State, bringing the various practices of husbandry in all parts of the State to the criticism and discussion of its members in convention twice every year, receiving from its various committees every year exhaustive reports upon all the important branches of agriculture, which are published in the Transactions for gratuitous distribution among farmers, and for exchange with other States for their published experiences, so that the experience of many of the States is brought within the reach of all who will take the trouble to go to the office of the Secretary at the State House. All these commend it to the farmer as his department in the State organization—really the Department of Agriculture. The Board has also aided, by the distribution of its Transactions, and the personal efforts of its members, in the organization of Farmers' Clubs, those effective institutions, which, wherever they have existed, have greatly improved the farming in their vicinity, and have done much towards demonstrating that farming is an intellectual pursuit, and thrives in proportion as intellect is applied to it. In this town the crops have increased twenty-five per cent. since the formation of our Farmers' Club. On our light land over twenty bushels of prime wheat to the acre have been raised by several persons during the last three or four years. But this yield of wheat is light in comparison with

what has been obtained by many practical farmers in the State. Thirty years ago, two gentlemen in Dorchester, where I then resided, raised thirty-five bushels to the acre without special cultivation, and in the ordinary rotation of crops then beginning to prevail. In both these instances the wheat followed potatoes, highly cultivated. Thirty miles from here, on the line of this railroad, Daniel Williams, a blacksmith, raised sixty-three bushels and three pecks of Black Sea wheat from an acre of ground, which went upon record, and was published in the "New England Farmer" of that day. In that case, also, the wheat followed potatoes, the potatoes yielding 300 bushels to the acre—then a good crop, but not an extraordinary one. And up among the hills of Berkshire it is the commonest thing to have crops of corn reaching 100 bushels to the acre; they do not think anything of it, it is so common. Showing that in Massachusetts the soil and climate, with intelligent cultivation, are capable of producing as much as any other part of the country, and that our agriculture is the main interest, and may be made a very profitable interest.

In the great North-West, the sole purpose of the pioneer and the new settler, (as they may all be called, for that is a new country,) is to get as large a crop as possible without much expense. He continues to crop that fertile land, therefore, in the cheapest possible way, exhausting the soil. We have gone through with that process. We have exhausted the land of Massachusetts, and we can only restore it to proper fertility by intelligent cultivation, by rotation of crops, by skilful application of manure and all the arts of husbandry, now so much better understood than ever before.

I said agriculture was an intellectual pursuit; and if any proof of that were wanted to-day, we find it in Europe—in the older countries—where the exigencies of the case have compelled them to apply science, skill, intellect, to their farming that they may succeed. A writer in the "Revue des Deux Mondes," in Paris, contrasting Germany with France, states that up to 1833 farming in Europe was as it had been from the time of Charlemagne—a rotation of two years in cereals and one in fallow; that since then there seems to have been, in Germany, a change of system—two years of cereals alternating with one year of potatoes, turnips, carrots and beets, and one

year fallow ; and there has been a great increase of stock and manure, and a diminution of naked fallow from one-third to one-seventh ; that France has gone on in the old way, the area of fallow land being about the same as it was a century ago. The writer has taken the live stock of Germany—the sheep, horses, asses and swine—and reduced them to the value of horned cattle, and he finds by the agricultural census of 1865, in Germany, 100 units of such value for 138 inhabitants, while France had only 100 units to 185 inhabitants. Going back forty years, he finds that the position of the two countries was exactly the reverse of what it is at the present time. Germany, as well as France, manufactures nearly all her own sugar from beets. In 1837 the product of Germany was three millions of pounds, while in 1865 it had reached the enormous amount of three hundred and seventy-five millions of pounds. Under the improved system of agriculture, land has advanced, upon the average, 150 per cent. Most striking is the difference in population. From 1846 to 1860—fourteen years—North Germany added, in round numbers, one million to its agricultural population ; while France, during the same period, lost seven hundred thousand of its farming population. The writer inquires into the causes of this marked divergence between the two countries in agriculture—the constant growth of Germany and the constant decrease of France—and comes to the conclusion that it arises from the fact that Germany has adopted a systematic course of instruction, embracing the physical sciences and political economy as well as mere farming. This, with the economical habits of the Germans, is the cause of the unexampled prosperity of that country. Germany, as you know, has instituted schools for instruction in farming—agricultural schools—in which not only general agriculture, but all the specialties of agriculture, the cultivation of the vineyard, and all other branches, are taught by professors devoted to that particular duty ; and the result has been an extraordinary increase in the production and in the wealth of that country ; and such, I cannot doubt, will be the result here.

But perhaps the most brilliant discoveries of the day are those of Prof. Ville, Professor of Vegetable Physiology at the Museum of Natural History at Paris, who for more than ten years has devoted his time to the discovery, if it were possible, of those

scientific laws which govern agriculture, so that a man may be sure of his results—as sure, setting aside contingencies of season, which affect all crops under any circumstances, as in any other pursuit. Giving up the ordinary methods of analysis, which have been found to be uncertain, and sometimes to have led to fallacious results, even on the part of most eminent men—as Prof. Liebig, for instance, who has had to modify his published opinions many times, as men who grow will often have to do—he took another method. Commencing with barren sand and a flower-pot, he added to that barren sand certain properties necessary in agriculture—for instance, phosphate of lime, potash, nitrogenous substances, and lime—lime only in the form of humus. He found that when one constituent was added, certain plants would grow in it, while others refused. Two of these constituents being added, a still larger number of plants would grow; and when, in short, all these constituents were added, in their proper proportions, a full crop—an abundant crop—was obtained. He found these proportions by these various experiments, covering, as I say, ten years of active labor, and finally went upon a farm at Vincennes, which the French emperor set apart for his purposes. By the way, I may say here that he met with the most determined opposition from the savans of that day, who questioned all his positions, who insisted upon the old science, and denied that it was possible to find out any general law through this method—through the making of the plant; for that is what it was; that was the laboratory out of which the truth came finally. You know how easy it is to dispute upon these matters; you know how difficult it is to make scientific men agree upon any proposition; and, in fact, it is only through continual controversies that the truth is reached at last.

I was saying that the French emperor, satisfied that Prof. Ville was upon the right track, put a farm into his hands, at Vincennes, where he demonstrated all his propositions to be true, and in the season of harvest invited all the country side to come and see the results, which proved completely the truth of his propositions.

Now, if that be true, we have found the key to a new husbandry, which will give us assured success; for whereas, under the past and present systems of husbandry you have to substi-

tute for the old fallow manures, and are obliged, therefore, to keep a heavy stock to make manures to enrich your farm and get good crops, these artificial manures—your phosphates, your potashes, and the various combinations of nitrogenous substances—may be taken into the interior, to any distance, and the farmer who cannot keep cattle, or has to commence without them, can immediately proceed to fertilize his farm and get full crops. If that be true, as it seems to be true, then concentrated salts, with the addition of humus, and the small percentage of lime necessary to make that humus accessible to the plant, will enable you, as in the presence of manures, with the addition of the other salts, to go on to success.

Of carbonaceous matters, it does not appear that it is necessary to have a great supply, any further than to amend the soil, so as to enable it to resist droughts and heavy rain. The soil, in other words, must have a proper mechanical preparation; it must be in the nature of a sponge, which will hold the solution you put to it, otherwise it might run to waste before the plant could apply it to its own uses, and grow into stalks and grain.

Prof. Ville has published a little *brochure*, entitled “Six Lectures on Agriculture.” Some of you must have seen it; some, perhaps, have not. Let me read a few excerpts from the translator’s preface:—

“When agriculturists demand an analysis to test the richness of a field, and repair its losses after each harvest, they lose sight of the fact that each field has its own peculiar wants, and what will suit one may not suit another.

“It is by stating the problem in these terms that M. Ville has arrived at its solution. He has studied the appetites of each plant, or at least of those three great families of plants upon which agricultural industry is mostly exercised, viz.: the cereals, leguminous plants, and roots; and he has deduced from this study the formula of a normal manure. * *

“To operate with greater certainty, M. Ville removed every element of error or doubt from his experiments, and proceeded by the synthetic method. He took calcined sand for his soil, and common flower-pots for his field. Ten years of assiduous observation and experiment led him to recognize that the aliment preferred by cereals is—*nitrogen*; by leguminous plants—*potassa*; by roots—the *phosphates*; we say the *preferred*, but not the *exclusive*; for these three substances, in various proportions, are necessary to each and all, and even *lime*, which humus renders assimilable, must be added.

"These facts, proved in pure sand by means of fertilizers chemically prepared, were next repeated in the soil of a field on the imperial farm at Vincennes, at the expense of the emperor. * * *

"During the past four years, curious visitors, drawn to the farm by the report of M. Ville's experiments, have been shown a series of square plots, manured and sown in conformity with rules laid down to test their efficacy. Upon some of these plots the seed has never been varied; the same soil has been planted four times in succession with wheat, colza, pease and beet-root; giving them, at the commencement, a supply of the normal manure, and adding annually what M. Ville terms the *dominant* ingredient—that is to say, the special manure of the series. Upon the other plots the seed alternated during the quaternary period at the expense of the normal manure, by changing the dominant according to the nature of each plant introduced into the rotation; and under these conditions the crops have reached to results of irrefutable eloquence.

"By adding, according to M. Ville's system, nitrogenous matter, phosphate of lime and potassa—that is to say, a normal or complete manure to calcined seed, the seed—wheat being equal to 1—the crop is represented by 23.

"Upon withdrawing the nitrogenous matter from this mixture of the four elements, the crop fell to 8.83.

"Upon withdrawing the potassa, and retaining all the others, the crop only attained to the figure 6.57.

"When the phosphate of lime was omitted, the crop was reduced to 0.77; vegetation ceased, and the plant died.

"Lastly, upon abstracting the lime, then the crop, the maximum of which was represented by 23, was only 21.62.

"From the above facts we draw these conclusions: that if the four elements of a perfect manure, above named, act only in the capacity of regulators of cultivation, the maximum effect they can produce implies the presence of all four. In other words, the function of each element depends upon the presence of the other three. When a single one is suppressed, the mixture at once loses three-fourths of its value.

"It is to be remarked, that the suppression of the nitrogenous matter, which causes the yield of wheat to fall from 23 to 8.83, exercises only a very moderate influence upon the crop, when the plant under cultivation is leguminous. But it will be quite otherwise if, in such cases, we remove the potassa.

"If we extend the experiment to other crops, and successively suppress from the mixture one of the four agents of production, we arrive at the knowledge of the element which is most essential to each particular crop, and also which is most active in comparison with the other two. For wheat, and the cereals generally, the element of fertility *par excel-*

lence, — that which exercises most influence in the mixture, is the nitrogenous matter. For leguminous plants, the agent whose suppression causes most damage is potassa, which plays the principal part in the mixture. For turnips and other roots the dominant element is phosphate of lime.

“ By employing these four well-known agents, M. Ville’s system may well replace the old system of cultivation. With him, the rule that manure must be produced upon its own domain is not absolute. During four succeeding years, M. Ville has cultivated, at the Vincennes farm, wheat upon wheat, pease upon pease, and beet-root upon beet-root; and he entertains no doubt that he could continue to do so for an indefinite period, the only condition necessary to be fulfilled being — to return to the soil, in sufficient proportion, the four fundamental elements above named.

“ Suppose we wished to cultivate wheat indefinitely. We should at first have recourse to the complete manure, and afterwards administer only the *dominant* element, or nitrogenous matter, until a decrease in the successive crops showed that this culture had absorbed all the phosphate of lime and potassa. As soon as a diminution in the crops manifests itself, we must return to the complete manure, and proceed as before.

“ Suppose that, instead of an exclusive culture, it be desired to introduce an alternate culture in a given field. We commence with the agent that has most influence on the plant with which we start. If that be a leguminous plant, we at first administer only potassa. For wheat, we should add nitrogenous matters. If we conclude with turnips, we have recourse to phosphate of lime; but when we return to the point from which we started, all four elements must be employed.

“ As may be seen, this system differs radically from that hitherto adopted. It has not for its basis a complex manure administered to the soil by wholesale, in which we endeavor to turn all its constituents to account by a succession of different crops. In M. Ville’s system, he supplies to the soil only the four governing agents of production, which are added gradually, one after another, and in such manner as to supply each kind of crop with the agent that assures the maximum yield.”

The translator does not speak of, nor does the text relate to, the other essentials of farming in regard to drainage, quality of soil, and the necessity of fermenting manures, as a sort of yeast, to induce in the earth that fermentation which quickens vegetation so much. It will not supplant other manures; it comes in aid of them, and supplies the want of them, when they are not present. All farmers are well aware that certain soils

require perfectly raw manure to create fermentation in the soil. Stiff clay is amended best in that way.

Professor Ville finds by experiment another proposition to be true, which surprised me; I am not farmer enough to be able to say too, it will surprise other farmers. Ever since the alkalies, potash and soda, were found to replace each other in the arts, they have been supposed to have the same effect in agriculture. Prof. Ville finds not only that that is not true, but he insists that potash, if it is used, must be in the form of carbonate of potash; that in any other form it does not have the proper effect upon vegetation, until, in the course of decomposition and changes in the earth, it ultimately becomes carbonate of potash.

I invite your attention further upon this matter only to the harvest of 1864, upon the experimental farm of Vincennes.

“On the 31st of July, M. George Ville reaped and thrashed his crops in presence of a large concourse of agriculturists. The results were as follows:—

WHEAT.—*Third crop from the same land, without fresh manure since the first application.*

Crop per acre.	Without manure.	With complete manure.
Straw,	704 lbs.	5,913 lbs.
Grain,	193 “	2,464 “
	—	—
Total,	897 lbs.	8,377 lbs.

WHEAT.—*Fourth crop, without fresh manure since the first.*

Crop per acre.	Without manure.	With complete manure.
Straw,	1,074 lbs.	4,629 lbs.
Grain,	316 “	1,760 “
	—	—
Total,	1,390 lbs.	6,389 lbs.

COLZA.—*Coming after two crops of Barley, without fresh manure.*

Crop per acre.	Without manure.	With complete manure.
Straw and silicates,	5,632 lbs.	7,700 lbs.
Grain,	1,320 “	2,410 “
	—	—
Total,	6,952 lbs.	10,110 lbs.

The beet-root crop was 22,748 pounds, leaves and roots, without manure, and 31,608 pounds with complete manure. He states, in another connection, let me say, that the manufacturers of beet sugar had found, that by reducing the remaining pulp to potash, they greatly increased their profits, and that habit prevailed somewhat extensively ; but in every case it was found that what actually went back to the ground lessened the crop so largely, as a consequence of the exhaustion of the potash, as to bring the product down to a point that did not pay a profit, and they had to give up their potash and go back to the old system, in order to keep up the fertility of the soil. It is, I believe, an established fact in all root-culture, that if the waste is carried back to the soil, after having been fed to cattle, the crop not only is not reduced, but in many instances increased. That is one strong proof of the necessity of potash, and of the folly of abstracting it, in any form, where we can possibly avoid it, from the soil.

Prof. Ville gives a formula of the proper quantities of these various elements to make a full crop. These tables are of great interest, but as they can be examined at your leisure, I will not trouble you with them.

All this does not change, in any degree, the necessity of a fertile soil. It does not qualify the soil itself ; it only enables you to get crops upon any soil. Many other matters come into the problem also, as the effect of sunshine and climate and season, and the capacity of the soil to hold moisture in the proper quantity for the growing plant. All these are agricultural propositions which are not disturbed by these results.

Prof. Ville's experiments led him very strongly to the conclusion that the plant does obtain nitrogen from the atmosphere when in a state of vigorous growth. He has made some very curious experiments of that nature, which are worthy the examination of intelligent cultivators. If that be true, plants are not so wholly dependent upon the putrefaction of vegetable and animal substances for the nitrogen necessary to their growth as has been supposed.

He publishes a table of the four agents contained in the crops, and in the complete manure, per acre :—

		Weight of the crops dried, lbs.	Nitrogen, lbs.	Phosphoric acid, lbs.	Potassa, lbs.	Lime, lbs.
1861.	{ Spring wheat, .	6.080	73.08	26.86	88.02	17.80
	{ Beet-root, . . .	8.972	289.53	46.59	184.21	67.56
	{ Barley, . . .	7.058	108.89	33.22	72.06	35.86
	{ Pease, . . .	5.145	148.17	35.60	82.39	112.93
Complete manure, .		—	153.10	176.00	176.00	176.00

So that the complete manure contained, in this case, for these four crops, 153 pounds of nitrogen, 176 pounds of phosphoric acid, 176 pounds of potassa, and 176 pounds of lime: the nitrogen being in the state of nitrate of soda or of sal ammoniac; the phosphoric acid in the state of phosphate of lime; the potassa in the state of carbonate of potassa; and the lime in a caustic state.

If, then, we shall have found, in this way, the key to the new husbandry, science will have at last unlocked that secret arcana which we have never yet been able to reach. All of us know with what hope all intelligent farmers, in this country and in Europe, turned to those scientific propositions issued by the eminent chemists of Europe which seemed likely to lead to a truly scientific and improved agriculture, whereby crops could be increased, and the result made a sure one. After many years, the results were found to be so uncertain in the way of guidance, that intelligent farmers laid away their books, and turned away from agricultural chemistry and the science of agriculture as matters fit only for scholars to dispute about, and went back to their practice. But if, as now seems likely, we have found a truly scientific method, by the application of which we can make certain the crops which we desire to raise, we shall enter upon a new era, and the results must be magnificent.

The diversified industries of Massachusetts lead to great wealth, but, after all, our prosperity really rests upon agriculture, and I cannot but think that we are not doing all that we might in the way of supplying ourselves with the leading articles of consumption, instead of buying from the West. There

was a time, indeed, when they were purely agricultural, and we were largely manufacturing; we sold them our manufactures, and bought their breadstuffs, and there was a reciprocal benefit in it. But they buy less and less in proportion to their population, continually, but we have to buy more and more from them, for the habit has grown upon us, and we do not raise our own breadstuffs. Massachusetts must pay twenty-five or thirty millions annually for breadstuffs. I have shown you that you can raise wheat in Massachusetts; and if every farmer would lay down a single acre to wheat, and let it go into his rotation, it would save a great deal of money to the State. There seems to be no difficulty in doing it. There is a gentleman before me who has raised here in Concord some of the whitest and finest wheat that has been seen anywhere, and he does not find any difficulty in doing it on our light soil. If we are to go into an intelligent cultivation of the soil, which is the real basis of scientific agriculture, it seems to me a necessity that we should raise our own breadstuffs.

With these few remarks, which only the necessity of the case has called forth, I ask you to nominate a chairman for this afternoon.

Dr. GEORGE B. LORING, of Salem, was nominated as Chairman, and the Board took a recess, until 2 o'clock, P. M.

AFTERNOON SESSION.

The Board was called to order at the hour appointed by the Chairman, the topic assigned for discussion being Cattle Husbandry.

The CHAIRMAN. I have been requested to preside this afternoon, gentlemen, and I am sorry to say, that one object in making the selection, according to the declaration of the committee, was, that I might open the debate on Cattle Husbandry. Some one said, after a long debate at one of the finest agricultural exhibitions ever held in New England, —the discussions at which some of you may remember,—that the fault of the chairman was, that he talked too much; that he did not know how to run an agricultural exhibition, because he was too much given to talk. I do not know but that may be the case; the

charge was preferred against me rather sharply ; but I have never yet repented of the course I pursued on that occasion ; and considering the fact that the committee were somewhat solicitous that I should open this meeting with similar talk, I do not propose to be governed by that warning at all, but to do what I can, in the best way I can, to commence the discussion upon this important question. I know, and you know, that it is the opening of a debate or a discussion which gives it character and importance. All that the opening speech contains may not be true, it may all be false ; but whether it is true or false, the more thorough and declared it is, the better opportunity it gives the meeting for discussion after it is over.

Now, this question of cattle husbandry is unquestionably the most important question that can be brought before an agricultural assembly. It lies at the foundation of our whole business of farming. There may be those who are engaged in the raising of root-crops, those who are engaged in the raising of tobacco, those who are engaged in market-gardening, so-called, those who are engaged in the raising of grass for sale in the market as hay, but go where you will, the bottom of the whole business is the condition, the quality and the utility of the cattle that are used in every district. From them comes, mainly, the best quality of manure that we can use. Every man who is accustomed to cultivate the soil, and cultivate it well, knows that his cattle really are the sources from which he can derive the best fertilizers for his soil ; and they are the sources of the production of meat for the market, and of all the products of the dairy ; and I say the production of all these things really lies at the foundation of almost all the most successful branches of farming.

When we remember all this, we must be aware that the whole business of cattle husbandry differs as localities differ. To one man, cattle husbandry means the breeding of animals of a certain description for specific purposes up to the highest standard of which they are capable. To the Scotchman, it means the breeding of Ayrshires for milk and cheese. To the Englishman, it means the breeding of Shorthorns and Herefords and Devons, for the purposes of meat. To the channel islander, it means the production of a choice and carefully selected herd of cattle, for the purposes of the dairy alone, and not, as those of you who know the channel islander well, understand, for the

purposes of meat. So that in one case, cattle husbandry means breeding, with all the nice laws that control that business; in another case, cattle husbandry means merely the selection of proper animals for feeding during the winter, or pasturing during the summer; in another case, cattle husbandry means the selection of cows for the dairy, either for the summer dairy alone, or for the production of milk during all the months of the year. So that cattle husbandry really means the selection, the breeding, and the feeding of cattle.

In the first place, in regard to selection. Are there any rules by which we can be guided in the choice of animals for our farm? One man lives upon a clay soil, his land is adapted to the production of grass and root-crops, and is situated near a large city, where he has a market for milk. His business seems to be one thing, and he selects animals that are adapted to the purpose of supplying that market with milk, and with that alone; and his object is to select cattle that can be wintered upon his land. Another man lives upon a hilly pasture, remote from market. His lands furnish rich, sweet pasturage, and the selection of animals with him is a different thing. And so each man, each farm, each county, each State, at any rate, each section of our country, requires a different selection of animals; one for one purpose, another for another purpose.

I find, in looking over the statistics of the cattle of the United States, that notwithstanding the vast amount of meat that is produced in many sections, the percentage of cows predominates very largely, in the New England States, over that of all other cattle; I mean, over oxen and steers, and other cattle that are kept for stores; and it is so in New York State, in the Middle States, and even in the Southern and many of the South-western States, where we are in the habit of thinking that meat alone is the great product of the farm. It seems to me, therefore, especially important that the American, and particularly the New England farmer, should select cattle that are specially adapted to the dairy; perhaps not for that alone, but mainly for that, so that when the production of meat is unremunerative, he will be able to resort to the dairy as the means from which he can run his farm.

Now, it is a very curious fact that there is no breed of cattle universally adapted to any large tract of territory. We are led to suppose that the Shorthorns are adapted to all parts of England; but it is not so. Some of the most careful and accurate English farmers will tell you that it is impossible to raise Shorthorns in their region. A most intelligent gentleman from Bruton, in Somerset, called on me the other day, who is a breeder of Herefords, his father, who occupies the farm adjoining, being a breeder of Devons, and when I spoke of raising Shorthorns, he said: "The thing is impossible in Somerset." And yet that man was breeding and feeding cattle simply and solely for the production of meat. It is only in particular localities in England that the Ayrshire, the West Highlander and other breeds of that description are produced. Knowing the fact, that even on that small island it is impossible to find any one breed of cattle adapted to the whole business of farming there, how can we expect to find a breed adapted to any one purpose in all sections of this country? The thing is impossible. There is a gentleman in Essex County who, forty years ago, imported Shorthorns, and they failed entirely; while at the same time the farmers on the Connecticut River breed them without difficulty, and have the best herds of cattle in New England. So the Shorthorn went into some of the rich fields of Maine, and into some of the fine pastures of New Hampshire, and did well. But even that breed, with all the care with which they have been long bred, are not universally adapted to the purposes of farming. Neither is the Ayrshire, which really stands next in the scale of artificial breeding for agricultural purposes. I put the Shorthorn first, because there is no doubt that the Shorthorn is the development of more care, more skill and more intelligence, as a uniform breed of cattle, than any other breed in the world. Next to that, I say, stands the Ayrshire. Now the Ayrshire, valuable as it is for dairy purposes in Scotland and in many parts of New England, does not seem to be equally valuable in all sections. Carried down into the southern counties, where the pasturage is richer and stronger, it does not do so well as on the hilly pastures of Scotland. In Maryland it does not do so well as here. It takes on more bone and a larger growth of flesh, but it does that at the

expense of the dairy qualities for which it is especially valuable in this section, where it is particularly appropriate.

What shall we do, then? One man tells you that the Short-horn is the best animal he can breed, and why. Another man tells you the Ayrshire is the best animal for him. Another man says that he wouldn't own a farm that did not have a Jersey cow on it; yellow butter, not much of it, but good; he wouldn't have a farm without a Jersey cow. Another man tells you he wouldn't give sixpence for a farm if it wasn't stocked with handsome, straight-bodied, nice-horned, rich-colored Devons. Another man must see a white-faced Hereford looking over his fence before he has any agricultural peace in his soul. What, I repeat, are we to do? I suppose the only rule we can adopt is for every man to learn the quality and capacity of his farm, and then make his selection.

Now, if I were to tell you that there was any farmer in Massachusetts who owned 520 acres of land, and the best land in the Commonwealth, who is capable of making meat here for the market, and make money enough from it to support his family and educate his children, you would be astonished. As a general rule, it is said that no man can feed beef to a profit in Massachusetts; and yet, right in the most expensive districts of Massachusetts, where farmers are obliged to pay large rents for their lands, high prices for grain, and from \$70 to \$80 a ton for their oil cake, farmers are making the largest profits of any in the world, almost, simply by the production of beef on their farms. They know it; they understand how it is done; they have ascertained the rule by which a pound of beef can be made more cheaply than by any other rule, and they make money on their farms in that way. They have selected cattle for that purpose. It would be folly and nonsense for them to go into that business and get a stock of Ayrshires and expect to turn them into beef profitably, where they are making Hereford and Devon beef to a profit. No Massachusetts farmer upon the hillsides of Berkshire would think of undertaking to raise a herd of Jersey cows simply for the purpose of supplying a few wealthy customers with choice butter at seventy-five cents or a dollar a pound. The transportation of the butter interferes with the profit of the product; it is impossible for him, and he must turn his attention to something else—perhaps the manu-

facture of cheese—as the great source of profit on his farm, and he secures animals adapted to that. Situated as I am near a city, where every quart of milk I make is really made to a profit—a small one, to be sure—it is idle for me to raise Short-horns to produce meat. My pastures are short and sweet, very well adapted to run dairy cows, and the market being close at hand, I am able to make a profit from those cows. So, I say, every man must be governed by the locality in which he lives, and the quality and capacity of his farm in making his selection.

Now this selection is not by any manner of means an easy thing. It is not every man who can tell what he needs in an animal for beef, for butter, for milk; you have got to be governed by nice rules in all that business. I insist upon that. The man who can go into a stable or barn or into a pasture and select from a herd of cattle the best animal to put into the stall, the best cow for the production of milk, that man has cultivated his powers of perception and judgment up to a point unequalled by almost any other person in the world. It is astonishing how quick, accurate, careful, precise, a man's eye has got to be in order to settle that question. It is astonishing how few of us have reached that point. You may talk about the exquisite skill with which the manufacturer changes the colors of his warp and woof, and all that, but I have never seen any men with sharper perceptive faculties than the men who have been successful in the selection of animals.

Now the question comes back to the question of breeding. I said in the beginning that one part of the business was the breeding of animals; how you can breed animals adapted to a certain purpose. You can purchase them in the market, if your eyes are sharp enough and your purse long enough; but how are you going to breed them so as to have a better herd than your neighbor, or so as to transmit the good qualities of your own herd. In the first place, having ascertained for what capacities your herd is intended, the business of breeding is just as simple, plain and straightforward as the business of ploughing or manufacturing. It only requires this: that the females should be properly selected; always taking it for granted that the female will be influenced to a very great extent by the first male which impregnates her. Always take care, if you desire a certain specific type of animal, to begin with the

females in your own herd, and take them from no other. They should be stamped there, and you will never have regularity and uniformity in your herd until you are careful of the first impregnation of your female animal.

If you are breeding for beef, you are doing what is a simple, plain, straight-forward business. The female selected for that purpose should be of a certain description, well known to all farmers. Round-bodied, fine-boned, clean-headed, straight in the back, straight in the rump, sharp, clean chine, good depth through the heart, and a solid, firm, substantial brisket ; a firm leg to walk upon ; a good, ample, luxurious mouth ; the expression of a good feeding animal is always seen in the mouth and in that part of the head which is devoted to the business of feeding. All these points, added to a good mellow skin, should always belong to the female out of which you intend to breed a herd of cattle for the purposes of feeding.

For the purposes of the dairy, the cow unquestionably should be of a different character. Somewhat deeper, less round in the body, with a rib flat,—I do not mean dropping flat, but a flat surface, with sharp edges,—springing gracefully from the spine ; loose shoulder, straight quarter, good lap, broad back, great depth of carcase ; and with all that, a certain elasticity to the touch which carries with it the impression of great secretory functions. These are the things (with superficial veins, and everything of that description) that you want in a female for the purposes of the dairy, and at the same time, that description of head of which I have spoken as belonging to a beef-producing animal.

With respect to the males the rule is,—notwithstanding what is said with regard to the resemblance of the male to the female,—that the male should present precisely the same points as the female, except in a masculine degree. No female headed bulls for me. Talk about a bull that has a feminine head upon him ! You might just as well talk about a man with a woman's head on his shoulders. You want in the male of the breed of animals that you are undertaking to produce to kill, every thing that is in the female, double-distilled, multiplied tenfold, because it is from the male side that the whole vigor and power and force of an animal comes, after all. So, when I describe a cow for the purpose of meat production, and a cow for the

purpose of the dairy, I always describe the bull as having the same points, for the same purpose only added to, multiplied and increased so as to make the animal strong and masculine.

There you have your male and female, and once having put these two animals together, if either one is up to the point you desire, do not abandon that line of breeding, and go out of it into other herds for the purposes of increase. This business of mixing animals—of turning one herd in with another—is all idle and nonsense; it is nothing but “confusion worse confounded.” The best herds of Shorthorns ever produced have been produced by a careful adherence to this rule, after bringing it to the type desired. The most remarkable breed of sheep have been produced in the same manner, and the best breeds of horses have been produced in the same manner. All the prejudices against in-and-in breeding have long since vanished before a skilful, careful and accurate mode of breeding. Feed well and breed closely, and you can make the type you want.

Now, after having produced these animals—after having brought them into your herd and established them—the next question is, How are you going to take care of them? What are you going to do with them? How are you going to feed them? The business of feeding animals is not an easy thing. It is not every man who can take care of a cow after he has got one. It is not every man who knows how to feed an animal, no matter how thrifty he may be. One feeder will take ten oxen, and make money on them; another feeder will take ten more, of the same kind, give them the same food, and lose money on them. Why is it? One reason is rather a sentimental one, I grant you: it is that one puts himself in sympathy with his herd, and the other does not. It sounds sentimental, but it is true. Cattle are just like men; they will take readily, gratefully, from one man's hands, and indifferently from another. The first thing, then, in beginning to feed animals, is to put yourself in communication with them, somehow or other, the best way you can, and then begin to feed them. If you feed them right, there is no trouble. For the purposes of the dairy, for carrying cows through the winter, I have no question that in this country, the best kinds of food, in the hands of a proper and judicious feeder, are the best English hay, some form of root-crops, and any kind of grain that is

deficient in oil. You can feed a cow upon good English hay unquestionably well, with the addition of mangolds or swedes, say half a bushel a day, more or less, according to her size, with fine feed, or oatmeal, and perhaps a little rye meal; but not corn meal nor yellow cake for a dairy cow. It is like brandy and water for little boys.

Nothing will tear a dairy cow to pieces so fast as cotton-seed meal. So I say, good English hay, corn-fodder, if you have got it, softened a little with warm water or steam, roots and fine feed, or oatmeal. Why is this? Why avoid those oily substances, oil cake and cotton-seed or corn meal? Simply because they all serve to stimulate to a feverish condition that delicate organization of the cow, by which she makes her milk. I say, that delicate organization, because there is no living organization, except that of the human brain, that I know of, that is so delicate in all its structure as the lacteal system of a cow that is brought up to the best standard of a dairy cow. It is more easily thrown out of order than any other. It is a little too hot, or a little too cold, the wind blows from the north-east or the south-east, and your cow feels it. Every man knows this. There comes up a shower, and a clap of thunder scares her half to death; she comes home at night, and your pail is half full. Do you suppose that an economy like that, which depends upon the nice organization of all the tissues, and nerves and veins, cannot be easily thrown out of order? Certainly it can. The oleaginous matter contained in cotton-seed meal throws that whole system into such a feverish state that your cow is utterly destroyed in the course of time. This is true, not only in this country, but all the testimony I have had from breeders abroad shows the same thing; and I warn all men who have dairy cows to avoid the feeding of these stimulating, oleaginous preparations, that serve to put the system into a feverish condition. In feeding for beef, it is another thing. Plenty of food, properly given, at proper times, not too much nor too little, always studying the capacity of the animal, with the ability to know whether an animal is thriving or not, I think is the proper way to feed an animal for the purpose of producing beef; remembering, at the same time, that there is such a thing as too much feeding for profit, as well as too little feeding; and he who knows his animal well enough, who has put himself in

sympathy with him enough to know what his capacity for food is, will know when he is feeding him to advantage, and putting money into his own pocket.

Now, to manage all these matters carefully which I have hastily gone over, it seems to me that we require, in this country, a more accurate and careful study of the animal kingdom than we have been accustomed to. I know there are men in New England—I see them here in this room—on whose judgment in the selection of animals I should rely implicitly. I should have no question about it—not the slightest. But how many men there are in this State and in other States raising herds who know nothing about it? You put them into a herd and they look on in a sort of wholesale admiration. If the cattle are colored well, they admire them; and if they are big enough they admire them; the bigger they are the better they like them. If they are handsome they like them. But how few men there are who have a careful, accurate, discriminate judgment—who will go along behind your cattle, put their hands on them, and say, “That animal feeds well—that does not; that is intended for a good purpose—that for a bad one.” Now we have got to learn that in some way, or our young men cannot run their farms to a profit. I know some young men who can do it—who have learned the rules by which they can do it—on their fathers’ farms; but we have not brought our agricultural education to that high standard which will enable every man, and especially every young man, to exercise this discriminating judgment. I met young men in England who carried on their farms to a profit; but they had evidently been schooled with the utmost care in regard to all these points.

Now it seems to me that one of the most important branches of education which we have before us, is that kind of education which will enable a man to judge well of the animal kingdom; to judge well of the cattle he is to have on his farm; to judge well of his herds—how to breed them and feed them; to judge well how to deal with even the vermin on his farm—the canker-worms, the caterpillars, rats and mice—the whole animal kingdom. It does seem to me, that one of the most important branches of all agricultural education is a thorough knowledge of the animal economy; in other words, of the natural history of the farm; that sort of knowledge which will make a man

familiar with the natural history of the farm which he is cultivating; which will enable him to understand his domestic animals and wild animals, and enable him to put his eyes on the various kinds of plants that are growing there, and judge of their capacity, and judge of it well. I think, therefore, one of the most important points of agricultural education in which this Board can possibly engage, is the careful and accurate study of all the natural history of the farm. And I come to that naturally, after having discussed the business of selecting, breeding and feeding the animals that live upon the farm; for how can we select animals properly unless we have an accurate knowledge of their whole animal structure? We must have it, either by instinct or by careful study. How can we judge of the best modes of breeding, unless we have carefully and accurately investigated the laws which control breeding, by which we can arrive at the results we desire? How can we best judge of the condition of our pasture lands and our grass lands, unless we know well, by accurate and careful study, what plants are most nutritious, and what of the least use, and how to get rid of bad ones, and how to cultivate good ones? Is there anything the farmer desires to know more than how he can rid himself of the insect pests of his farm, which invade his orchards, and his grain crops, and his grass crops; which are above ground and under the ground, and invade him in the dry season and in the wet season, and are really the cause of more expense than all his family expenses, year in and year out? Now, when I say to you that this whole matter rolls in upon us under the head of a careful and accurate knowledge of the natural history of the farm, you will then understand the vast importance that I put upon it; and I trust that in discussing this question of cattle husbandry, as part of the business of farming, there are those here who will open this whole question of the education of the mind of the farmer upon the natural history of the farm.

Now, gentlemen, the question is open for you to discuss. I think I have laid out ground enough. I have made as many points as I possibly could in a short discourse. I leave it for the meeting to take them up, one after the other, and debate them.

WILLIAM BERNIE, of Springfield. Speaking of this matter of agricultural education, I attended a cattle show last fall, some

fifty miles from here, and heard a man who had been governor of the State, and is now a member of Congress, [Hon. George S. Boutwell,] say that all this matter of agricultural education was mere nonsense. He stated that he had always said that the Agricultural College would be a failure; it could not succeed, in the nature of things, for as soon as you educated a boy he would leave the farm. Consequently, the conclusion he came to was, that all the education a farmer got he would have to get at the tail of the plough—or words to that effect. I never was so much astonished in my life. I supposed it was some badly reconstructed rebel. I have heard such doctrines down South—that as soon as you educated labor you destroyed it for agricultural purposes. The doctrine there has been, “Keep all education away from the laborer; you can manage him better.” I suppose that was the theory of the ex-governor—that you could manage the agricultural population better by denying them education. But from the remarks I have heard this morning, I should judge that education was necessary even for the farmer. Mr. Bull says that a knowledge of chemistry is necessary; that chemistry would tell us what it is best to raise, and all that. But I would not advise any farmer to go home and sell his cattle. I think our most reliable source for manure, (notwithstanding what we may derive from chemical sources,) is found in cattle. I think the experience of every farmer here will bear me out in saying, that only in those regions of country where the largest number of cattle have been maintained have they been able to keep up the fertility of their soil. We find that in the great grain-growing sections the wheat crop has fallen off largely, while the product of the dairy has kept pace with the population. All through the State of New York we find that the wheat-producing sections have fallen off in their production a great many bushels to the acre, while the dairy-producing sections have constantly increased their product. That State produces one-quarter of all the butter and one-third of all the cheese produced in the United States, but very much less wheat than fifteen years ago. I think these facts are very strong arguments in favor of keeping cattle, and I find that New England farmers have profited by that experience. We find the cows in Massachusetts increasing steadily at the rate of 1,400 a

year, right along, while I have no doubt that our production of grain has fallen off very much of late years.

Dr. Loring has told us the method of selecting the best kinds of cattle for our different localities. I do not suppose I can say anything to improve upon what he has said, as to the importance of care in feeding them and in breeding them. I find most agricultural societies even now offering premiums for grade bulls. It is astonishing to see a miserable black bull take a premium at a cattle show, with no pretence that the blood was worthy of notice at all. Now, I maintain that the only method of improving our stock of cattle is by using males of some one of the improved breeds. I think wherever you find an improved bull, of what breed you please, you will find a decided improvement in the stock of that section. If you have a cow for sale that had an Ayrshire, or Shorthorn, or Alderney bull for her father, you would not hesitate to ask ten or fifteen dollars more for her than for an ordinary, native cow; you would maintain she was all that better, and no doubt she would be. Well, if we can increase the value of our stock five dollars a head, we have 240,000 head of cattle in Massachusetts, and you see what an addition it would be to the agricultural wealth of the State. And if we did that, we should increase the annual product of those animals to a like amount.

I am satisfied that for Massachusetts, for dairy purposes, the Ayrshire cow, as the doctor has told you, is the animal. There are some localities, undoubtedly, where the Shorthorns will thrive; but for dairy purposes, in Massachusetts, the Ayrshire is the animal; and if we can improve the milking qualities of our cows by the introduction of the Ayrshire stock, why do we hesitate to do it? If we get them, then the question is, how shall we feed them? I think there is a point where more is lost in Massachusetts, than even in breeding these native animals, if you choose to call them so. I have not the least doubt, that ten or fifteen per cent. of the food given to cattle in Massachusetts is wasted, trodden under foot, thrown away; and there is no one point where our farmers can improve so much as in the feeding of their cattle. I do not pretend to say what the method should be, but there is a general carelessness, a general want of economy. And I agree with the doctor in what he says in relation to the kinds of food. I have never used

much cotton-seed meal, but I am satisfied that Indian meal is not the kind of feed for cows. In my experience, rye or wheat bran produces very much better results than corn meal.

CHARLES L. FLINT. It is well known to most farmers present, that Mr. Birnie has experimented somewhat extensively upon the methods of feeding stock, and I think when his methods are studied carefully, it will be admitted that they are judicious. At any rate, he has arrived at some satisfactory conclusions in his own mind in reference to the preparation of food for dairy cows. I think it would be exceedingly instructive and agreeable to everybody present to have him state, somewhat in detail, the results, and his conclusions from his experiments in the steaming and preparation of cattle food.

Mr. BIRNIE. I am not prepared to give any detailed account, so far as respects weights and measures. It is well known that I have practised steaming the food for my cattle for ten or eleven years, and I am satisfied that I save more than twenty-five per cent. by doing it, though I am sorry to say that very few of my neighbors have adopted it, but some have, with satisfactory results; and I notice that a gentleman in the State of New York has given some very satisfactory account of his experiments in that line.

I cut and steam almost all my fodder, feeding twice a day with steamed food, and in the middle of the day with dry hay. Corn stalks, rye straw, bog hay, anything I happen to have in the way of coarse fodder, is cut and mixed with English hay—perhaps one-half of the whole mess is good hay, the balance is a mixture of the coarse fodder, with a little rye or wheat bran. It is put through the cutting machine, then put into the steam-box and steamed, and fed warm;—taking care to keep my cattle warm in the meantime. I make my stable just as warm and comfortable as I can, and never let my cattle out, except on warm days, when the sun is shining warm. Water is carried into the stable, so that they can drink without going out. Sometimes, in the coldest weather, they do not go out for a fortnight. I think that is the better way, for turning them out to exercise don't amount to anything. Turn a cow out into the yard on a cold day, and she will stand in the same spot for hours, unless you force her to move. Consequently, I do not let my cattle out unless the weather is very pleasant.

I steam twice a week. I put into my steam-box about fourteen hundred pounds of good hay, corn stalks or rye straw, and one hundred pounds of wheat bran. That feeds all my stock twice a day for three days and a half. I have forty-two cows and animals that are over one year old ; six horses and ten head of cattle younger than that. They are all fed out of the steam-box, the horses getting a little in addition—bran when they are not at work, meal when they are at work. I find that quite young colts eat it eagerly. In the middle of the day they have about one hundred and fifty pounds of hay. So that about five hundred pounds of good hay and fourteen hundred pounds of steamed fodder last that whole stock three days and a half.

In putting the fodder into the box, I intend to put in just as much water as I can make it carry, the object being to make it absorb as much water as possible, and reduce the mass to as soft, pulpy state as possible. Of course my apparatus does not admit of much pressure, and I boil as long as possible.

Professor AGASSIZ. Do you not lose a good deal of the water which has been mixed with the food ?

Mr. BIRNIE. Not much. Sometimes there is a little leaks out, and I have arranged to save that. I do not allow that to go to waste. Whatever is not eaten is collected and thrown in again. Sometimes, for a cow that is fresh in milk, I throw in a little oatmeal ; but I usually intend to feed my milch cows half a bushel of mangold wurzels each a day.

A MEMBER. How large is your steam-box ?

Mr. BIRNIE. Six feet square and about seven feet deep. I have cultivated cabbage for a number of years for the purpose of feeding it to my milch cows, and I feed it largely. I know the theory has been that cabbage would taste in the milk, but I have heard no complaint from my customers of that kind. I give my cows as much as they will eat. I have found no green feed that will put flesh on cows like cabbage ; consequently, I cultivate several acres for the purpose of feeding to my cows. After the cabbage is gone I feed mangolds.

A MEMBER. Do you steam those roots ?

Mr. BIRNIE. No, sir. I have, but it requires a great deal of labor, and I was not satisfied that there was sufficient advantage to compensate for it.

A MEMBER. About how much hay do you consider enough per day for a common milch cow?

Mr. BIRNIE. I do not mean to give them more than two or three pounds of hay, in addition to the steamed food.

A MEMBER. About how much do you allow each cow, of the steamed food?

Mr. BIRNIE. I give them about two bushels each, varying according to size and condition.

A MEMBER. You do not exceed twenty pounds?

Mr. BIRNIE. Not near so much. I don't think they get fifteen pounds. I find horses grow very finely and colts thrive upon it. They will leave nice English hay to get it.

Dr. LORING. Some very curious experiments have been made by Mr. Mechi, with regard to steaming food, agreeing very much with Mr. Birnie's statement. He says that his horses were never in better condition than when he fed them on steamed food. The only reason he ever abandoned it was, that his foreman was unwilling to go into the labor of steaming. His testimony is very strongly in favor of steaming. I have tried steaming myself a good deal, and agree with Mr. Birnie, except in one particular, on which he does not seem to have dwelt, and that is, the expediency of steaming good hay. I have not found that it improved the quality or nutritive properties of English hay,—the best hay,—to subject it to the process of steaming; I have thought it injured it. But corn fodder, coarse straw, coarse meadow hay, everything of that description, is undoubtedly brought into a better condition, as nutritive substances, by cooking, than without. I have no doubt of it at all.

With regard to the cooking of roots, the Board will find some very curious experiments recorded in an essay printed in the Secretary's Report of 1861. They were selected by myself from some experiments carefully made in Scotland, to test the comparative value of steamed and raw roots as food for cattle. The testimony there is very strongly against cooking roots for feeding cattle.

Mr. BIRNIE. You will find a very good article on this subject of steaming food in the last United States Agricultural Report, by Mr. Stewart, of New York. He goes into the matter very fully, and states that there is a saving of more than thirty per

cent. I have no doubt that he is very nearly right. His cattle look better, their hair lies smoother, they are better in every way. I differ from the doctor in regard to the effect of steaming on English hay. I think it improves it. It seems to soften the woody fibre and disengage the aromatic oils. Where I mix it with the other feed, I find it flavors the whole mass. The odor of the hay seems to penetrate the whole mass. Coarser fodder, musty hay, that cattle would reject at once, will be eaten by them with avidity, after it has been put into the steam-box. It seems to destroy the musty flavor at once.

Professor AGASSIZ. It must save the secretion of saliva to an enormous extent, and therefore relieve the animal from a physiological labor which is very manifest. I have no doubt that that must be the chief cause of the relief to the cattle, because dry food must be softened in order to be digested; and it must be done by the secretions of the mouth—by the secretory surfaces of the alimentary canal, and, in fact, by all the secretory surfaces of the digestive apparatus. Now, where does that come from? From the blood; and if you supply the food so far softened that the animal is relieved from that physiological labor, you place your animal in a much better condition for its work. I have no doubt that there is the explanation of your results—that your steam performs a part of the operation which your animal has to do itself by its secretions.

Dr. LORING. I should have mentioned that, but I did not, because I once said it at an agricultural exhibition at Newburyport, and was ridiculed for stating that it was worth while to save animals labor in feeding.

Professor AGASSIZ. If Newburyport is ignorant, it is no reason why the fact should not be repeated here.

Mr. BIRNIE. Speaking of steaming roots, I will say that one winter I cooked my mangold wurzels for a long time. I found that in boiling them they gave out a great quantity of water, and I had no convenient method of utilizing this water. It discharged into the barn cellar. I had some pigs there, and I found they drank it quite greedily. I tasted it and found it quite sweet, and made up my mind that I was losing all my sugar, and gave it up. I now cut them fine and feed them raw.

Mr. HUBBARD. When we get something new before the Board, we generally consider the one who introduces it as a witness. I would like to question Mr. Birnie still further, and inquire whether his business is making milk or butter?

Mr. BIRNIE. Milk.

Mr. HUBBARD. Then I would ask if the process of steaming food would be equally beneficial for butter as for milk making?

Mr. BIRNIE. I have not the least doubt of it. I think Mr. Stewart's business is butter and cheese making. My box, when I first began to steam, held only enough for one day's feeding, and I steamed every day. I did not like to ask my man to work on Sunday, and so I fed cold feed on that day; but I found that one day's feeding of raw and cold food lessened the quantity of milk very considerably. I consequently enlarged my box. I ought to state that my man afterwards volunteered to steam Sunday—he did not like to see the milk fall off—and I paid him extra until I got the box enlarged.

Another point of saving is in keeping up the animal heat. If you draw off a pailful of milk from your cow, of course you reduce the heat of the animal; and then, if you fill her with cold water and cold hay, perhaps, you get her pretty cold. I do not give my cows cold water, but warm it a little, and feed them this warm food—warm as blood—and consequently I return something for the heat which has been drawn away from them. I keep my barn as close as I can, keep my cattle in on cold days, and the result is, that they look quite as well as my neighbors, with very much less expense for food, I know.

Hon. SIMON BROWN, of Concord. I am very well satisfied, from my own experience in feeding cattle for the last twenty years, and, indeed, nearly all my life, that this subject of cattle husbandry is very imperfectly understood, and the statement of these experiments is exceedingly valuable to us on several accounts, but particularly so because they come from our own people; people who live in our midst; people on whom we can rely as practical men—men who understand their business perhaps as thoroughly as any persons understand their business in this State or country. I have listened, therefore, to these statements with very great interest, and I rise to state a circumstance which transpired a few years ago in the town of Waltham. A

friend of mine had seven cows, all valuable animals. He was making milk for the Boston market, and thought he would try the experiment of steaming the food ; but as he had no apparatus to do that, he procured a boiler which held two barrels and boiled all the hay that he fed to those seven cows during the entire winter. The statement which he made to me seemed an extraordinary one, but he said that it could be verified by many of the neighbors, who came in often to see his operations. He said that the milk of each cow increased very materially, and continued to hold out during the whole time that he made the experiment ; that they ate the hay with great eagerness, and seemed to like the water in which he boiled the hay better than the hay itself. He said that on one occasion a cow drank five common water-pails full of that water in the morning, at one time, pailful after pailful. I stated these facts to the man who purchased the milk and carried it to Boston, who had had a long experience in buying and selling milk, and he said he was aware of the experiments that were going on, and he was ready to state that he never carried so good milk into the city as at the time these experiments were being made ; that his customers—who were particular customers, who wanted a good article and were ready to pay liberally for it—sought for it eagerly, and he could not supply the demand.

Now we cannot all go to the expense of purchasing an apparatus for steaming the food for our stock ; a great many of us would be glad to do it if we had the means. We are borne down with the cares of the day ; we have not the skill or genius to go into this thing ; we do not understand how it is done. What is the next best thing we can do ? I will tell you what I think it is—and it is not mere theory, for I have practised upon it for a great many years.

In the first place, I have two hay-cutters, of good size, (and I would not recommend any man to buy a small one,) and I cut all my fodder—cornstalks, meadow hay, straw, and everything that I intend to use for feed—several tons at a time. My barn is tight, and it is thrown on the floor, or on a mow, where it is sprinkled over with water ; a little salt is added, and it is suffered to remain there two, three or four days, until the whole mass is moist. Then it is overhauled, mixed thoroughly, and any grain which I have to use is mixed up with it. It is suffered

to lie twenty-four hours, and then given to the cattle. I have tried that experiment, in contrast with the experiment of feeding long hay and long fodder, and mixing English hay and the poor qualities, and without any accurate experiments, such as weighing or measuring, (which I have not gone into, except in one instance, where I weighed the food given to my horses,) it seems to me that even that cheap and simple process saves about one-quarter of the fodder; and the cattle appear better, even, than they would if the other kind of food was fed out. I have been through that experiment so many times, that I have come to the conclusion that that is the result of that process. I was led to try it by the difficulty of getting hay. Fearing that I should run short one winter, I went to one of my neighbors to purchase some, and he asked such an exorbitant price that I ordered a ton of oats and corn and had them ground together and sent up to me. I then took all my fodder and mixed this meal with it; and instead of falling short of hay, I had a ton or two left, after carrying my stock through completely, and they never did better. I have no doubt that I saved by that operation, after the commencement of the month of February, two or three tons of good hay. We can all do that. We can all purchase a hay-cutter, and can occupy the stormy days of the winter in cutting up the fodder, and carry through our stock for twenty-five per cent. less than in the ordinary way.

Professor AGASSIZ. May I ask the gentlemen whether, instead of giving their cattle water, they do not sometimes give them a warm infusion of hay as a beverage? We do not always drink clear water when we are thirsty, but occasionally take a glass of wine—when we like it, or approve of it, or we take tea; and that tea helps the constitution, acts as a tonic on the digestion; and I suppose that kind of tea given to cows, instead of clear water, would improve them too.

Mr. BROWN. Your question reminds me that I raise all my calves on hay-tea. The calves are taken off after they have sucked two or three times, and as I make butter all the time, summer and winter, the calves are fed with skimmed milk, (what there is to spare,) mixed very largely with tea made of English hay, just as some old women make tea in the teapot. At first, perhaps, there is a pint of milk taken from the cow, put in with the hay-tea, and the man teaches the calves to suck

by putting his finger into their mouths ; but it is not necessary to do it more than two or three times. They will take the tea very well. I have calves now which are living upon tea made of English hay, and have had nothing else since they were four or five weeks old ; and they thrive excellently upon it.

Mr. BULL. It has been suggested that there would be a difficulty in this matter, on the part of farmers who own only two or three cows, on account of the expense of this steaming apparatus. I was much interested in a little invention that I saw not long ago, which consists of a little boiler, with two copper tubes, one inside the other, connected at the end ; the fire goes through the middle pipe, the water surrounds that pipe and steam is made very cheaply and quickly. A tube from the steam chamber is led into a barrel or box, into which you have only got to put what you want to cook ; and you can, with the least expense, and little trouble, cook a barrel or two of potatoes, or steam a hundred pounds of hay. That would be a very cheap thing for a small farm. I think the whole expense would only be about \$15 and it would last a great many years. Half an armful of wood would steam a barrel of potatoes. The cover shuts the steam in, and the succulent root is steamed in an incredibly short time.

Mr. BIRNIE. There is the Prindle boiler, made of cast iron, which is used quite extensively for such kind of purposes.

Professor AGASSIZ. Allusion has been made to the desirableness of instruction concerning the natural history of the farm. That is a subject upon which I have reflected a good deal, and with reference to which I should like to make some remarks.

It has been stated this morning—and it is no doubt the impression which everybody has—that science and practice are frequently at loggerheads. I wish, if I can, to help remove the distrust which exists among practical men, with reference to scientific pursuits, because I know that there is no longer any ground for it. I know that scientific men have long known how valuable to progress in their own departments all experience is which they obtain from practical men ; and as I have devoted all my life to scientific pursuits, I would, if I could, contribute something towards establishing the proper relations between him who follows the pursuit of what is useful in the

closet, and him who follows the same pursuits in the field ; for that, I believe, is the only difference between scientific men and practical men—that one does his work in the study, and the other does it in the field. When, this morning, our friend, Mr. Bull, alluded to Prof. Ville, and represented him as a man who had met with the opposition of scientific men, I think there was an impression given which is not altogether correct. I know Prof. Ville. He was a young man, just out of school, when I left Europe, but already aspiring to a position in the scientific world ; and he was soon appointed to a position in the Jardin des Plantes. There is no more exclusively scientific institution in the world than the Jardin des Plantes, where he has made all the experiments which have rendered his name famous, and which have shown him to be so highly a practical man, that great reforms even in agriculture are expected from the application of the results he has thus far obtained. I think there can be no better instance of the entire mistake of representing science and the practical purposes of agriculture, or any other pursuit, as in antagonistic relations to one another.

Now, with reference to extending the instruction which science has obtained in relation to domestic animals, in relation to insects injurious to vegetation, in relation to all natural history bearing upon the prosperity of the farm, I feel that we have a duty—that this Board has a duty—which ought not to be left unperformed. There are colleges arising in every part of the United States, the chief object of which is to foster improvements in agriculture. There are many of these institutions which are exclusively agricultural colleges. The pupils of these institutions are to be taught that which will improve their business, and they are to be taught that which will be substantial knowledge. We should have all the experiments of Prof. Ville repeated in these colleges. But that is not all. We should have all the experiments made by Magendie and Boussingault upon the feeding of cattle, upon the nursing of animals ; we should have all the experiments made upon breeding, upon crossing breeds, and upon the whole animal economy of the domestic animals. All that should be taught in these colleges, in as advanced, as perfect and as comprehensive a form as the information can be had. Well, we have no teachers competent to do that. You may want to appoint them, but you cannot

find them. You must, therefore, (and this is the point to which I want to call your attention,) you must organize something like a normal school to fit teachers to give that kind of instruction in all our agricultural schools and colleges, of which there are already so many that the idea of organizing a normal school to educate teachers in that direction is not out of place—is not disproportioned to the object. I think that this object can be reached sooner than you would anticipate, because you have already more in the way of securing that result than you are aware of. You may remember that eight years ago the State granted \$100,000 to build a Museum of Natural History at Cambridge, and by private subscriptions and bequests that amount has been increased to something like \$300,000. I have been honored with the direction of that institution, and I have done everything I could to make it what it should be—the nursery of scientific and natural history studies. Let me say, that it is the only institution now in the country where, the whole year round, at all times, there are dissections going on—not of human bodies—that belongs to the medical school—but of animals of all classes; that there are a few students learning natural history there; and that, at this moment, the work done in that institution, of which Massachusetts knows very little, has made such a mark in Europe, that yesterday I received a letter from Prof. Leuckardt, one of the leading zoölogists of the day, and editor of the practical scientific journal of Europe, in which, alluding to what has been done in that institution, he says: “The position of America in regard to these matters is really wonderful, and excites my admiration. How miserably small, in comparison with that, appear our university doings and our efforts.” That is what a European professor, the head of one of the great European universities, writes respecting one of your institutions, only a few miles from here.

Now, I ask, why does not that institution yield results for home consumption? Simply because it has not yet the means of sustaining a sufficient number of teachers to enable it to apply its capabilities to that specific object. But suppose that some benevolent individuals, some association like this, or the State, should grant merely the means of appointing one professor of anatomy, applied to the study of domestic animals, and one professor of entomology, applied to agriculture; the building is

there, the working rooms are there, the materials for examination are there ; and you could send any number of pupils to be instructed there, and they would receive their education free of all charges—for those are the terms on which I receive the students who come there.

Now, I think it is worth while for the State Board of Agriculture to consider whether it will not encourage the founding there of special professorships for those departments which are needed to be taught in our agricultural colleges, and thus build a nursery which shall prepare all the teachers we want, which we have not got, and cannot get, and which we ought to educate at home.

This is a mere appeal to your sympathy, and I think that the institution in behalf of which I have made that appeal, deserves that sympathy ; and I think that it is the only institution in the country where such a thing can be done with a chance of success, because it has all the appliances needed, but it has not an income sufficient to connect with its present operations that of teaching, in the way in which teaching should be done, for agricultural purposes. The purely scientific purposes for which it was especially founded are there carried on, and it requires only some such extension in order to give it that practical capability which would foster the progress of agriculture in the various directions in which natural history is necessarily connected with agriculture.

And let me add one word of a general character. I am fully aware that agriculture needs no science, because men have cultivated the soil before science existed. All antiquity raised domestic animals, and plants which served as food, before the raising of any of these things had been worked up into a scientific form ; and therefore, any scientific institution, or any individual who claims that science is absolutely necessary to carry on these operations, would be guilty of an unwarrantable exaggeration. But then, it is equally true, that agriculture has made, under the influence of science, such progress, that in our days of rapid movement, the community cannot afford to discard scientific progress, and science will contribute to the improvement of all departments of human activity ; and it is just that beneficial influence that I should like to see penetrate rapidly and more extensively all branches of practical business,

and agriculture in particular ; and there is nothing that would stimulate that more than the special study of natural history, in connection with agriculture.

Now, when I allude to that, I allude to a very comprehensive field, for the natural history of agriculture embraces the knowledge of all the larger domesticated animals—their anatomy, their physiology, the nature of their diseases—in fact, the natural history of agriculture embraces that which forms the foundation of the veterinary surgeon's science. Then it embraces all that relates to those other animals, of less value, and yet of considerable interest upon the farm—all the various kinds of fowl, the economy of bees, and the characteristics and habits of insects injurious to vegetation.

There is an erroneous impression abroad that science must know insects, that science can therefore furnish all the information needed to insure the destruction of insects injurious to vegetation ; that books may be consulted, and that from books you may get all the information necessary to obviate the injuries done by insects. Well, if in Germany they have done great things in the study of their insects injurious to vegetation, if in France they have done something in that direction, what have they learned ? To know the animals and insects that are injurious to vegetation in those countries. But we have others here, and we cannot do anything towards checking the injury they produce until we know their habits. It is a new study to be begun. When I get a letter from a man in the West, or at the South, telling me that he has a worm or an insect on his farm which does great harm, and he wants to know what to do, it is as if a man in China should write that there are birds about there which he would like to catch, and ask with what bait he may catch them ! We should want to know first what the bird was, before we could tell what bait should be used to catch him. And so it is with our insects injurious to vegetation. The different sections of the United States produce insects injurious to vegetation which are different from one another. The insects injurious to vegetation in South Carolina are totally different from those which damage our crops, and therefore must be studied there ; and when they send to the North for information, we can simply say this—"We know

nothing about it; you must study that subject at home; and unless you have studied it at home, you can have no remedy."

Now, how will science help in this matter? Just by giving the methods by which the study can be made; by just telling how insects are studied, in a general way; and with that general information, the agriculturist of any district which has not yet been investigated in that manner may go to work and learn for himself, or through those to whom he may intrust the labor, what to do for his particular locality. That is exactly what I should like to have done in the way of preparing teachers for our agricultural colleges. Give them that kind of general knowledge relating to those animals which belong to the different classes from which are borrowed the useful animals, and any which exist that are injurious to vegetation, that with this general information, they may begin to carry on the special study which will give them the means of checking the injurious one, and of fostering that which is useful.

H. C. MERIAM, of Tewksbury. It is perilous, almost, to attempt to say anything on the subject of cattle husbandry, after it has been nearly exhausted by others; but its importance has not been exaggerated. I believe the value of neat cattle in this Commonwealth to-day cannot be much less than twenty millions of money; and I think there is no man who is in the habit of visiting Brighton market, or knowing the prices at which cattle sell there, who will not say that grade cattle bring from twenty to thirty per cent. more in open market than scrub or native cattle. I believe myself, that with a little care, our neat cattle might be increased twenty-five per cent., at least, in value. Agriculture in New England is somewhat general, and hardly any farm in the interior is devoted to making butter and cheese. Generally, where there are forty head of cattle, there are some fifteen cows; the farmer is raising calves, has a few heifers and steers coming on, and some three or four year old steers with which he does his work, while the older ones are sent off; so that I think the breed should be selected which is adapted not only to the dairy, but to beef and working oxen.

It has been stated here that the first male put to a young female has an effect forever upon her offspring. That doctrine has increased in favor somewhat within the last twenty years. I recollect conversing with the late Col. Jacques, who was per-

haps the most experienced breeder in this country, and he told me that he thought there was nothing in it. I have been engaged in breeding the greater part of my life, either for myself or others, and I will state my experience, which satisfies me there is nothing in the doctrine whatever.

As long ago as 1840, I bought a scrub bull to mate a Durham bull. I worked my Durham bull to give him exercise, in order that he might be a good stock-getter. By accident this scrub bull got to a young Durham heifer, white, and she had a mongrel calf resembling the father. After that I mated her with a pure Durham, and I never saw a single trace of that first impregnation in her offspring. About that time I had an African gander, which differs as widely from the Bremen as the African from the Caucasian. The African gander has a broad head, bill black, with a crown on the top, a long neck, and is of rather a slate color. The Bremen is a short, thick, milk-white goose. I mated this African gander with a white Bremen goose, and her first brood resembled this African gander. Subsequently I mated her with a pure Bremen gander for years, and I never saw a trace of the African blood in feature, color or anything.

Again. Somewhere about that time a friend of mine had what was denominated a cross-breed hog—a very thrifty, large hog, but the color was black. I at that time had a young Mackey sow, pure white. Wishing to enlarge the size of the Mackey, I put this pure black cross-breed boar to this pure Mackey sow, and ever afterwards bred her to a pure Mackey, and I never saw a trace—not a single trace—of the first impregnation. And in breeding fowl, pigeons, dogs, geese, rabbits, sheep, horses and cattle for thirty years, I have never seen a single fact to convince me of the truth of the proposition that the first impregnation influences the future offspring.

With regard to the feeding of animals, I think, with the chairman, that there is no subject upon which individuals differ more, in the expense and in the results, than in feeding cattle. I have one neighbor who I think feeds his cattle full fifty per cent. cheaper than his other neighbors. I was astonished at the small quantity of food with which he carried his cattle through, getting the usual quantity of milk, and keeping his cattle in good condition. He adopted the practice of mixing up his

English hay, meadow hay, cornstalks, shorts or meal, whatever it was, and soaking them. Now common sense teaches us that an animal, in order to thrive, must have the same amount of nourishment to produce a given result. Then the question arose in my mind, "If he feeds so little, how is it that the cattle are in such good condition and he obtains such results in milk?" I accounted for it in this way. In the first place, by soaking the food, you get a larger bulk. Every gentleman familiar with breeding animals, and who has examined closely their excrements, knows that a vast amount passes through cattle and horses which is not digested, and is therefore lost. Then there is a loss, where the food is fed dry, in the coarse matter which cattle reject. I think soaking the food is preferable to steaming it. If you steam too much it has no resemblance to succulent green grass, the natural food of cattle; but when it is soaked thoroughly—made to absorb as much water as it will—it is put into its natural state, so that it resembles the natural food of cattle in their wild state. Our cattle are fed, six months of the year, in an artificial way. In their wild state they would migrate, as cold weather approached, to a climate where they could get their natural food—green grass or browse. I think the reason that twenty-five or thirty per cent. of hay and grain is saved by feeding them to cattle after they have been soaked, still producing the same result, is because it is brought into the condition of their natural food; it all assumes a common character and is eaten up clean.

Then there is another advantage. Men and animals fed on one thing will not thrive. If you watch animals closely, you will find that they take a great variety; and by mixing this food up, you give them a great variety. At the State Almshouse, in our town, they steam the food for their cattle, and produce the same result mentioned by Mr. Birnie. They not only feed their cattle cheaper, but they get a larger quantity of milk from the same number of cows than is obtained on any farm in town. And not only so, but they make better butter from their cows in that way.

I was glad to hear reference made by Mr. Birnie to the speech made at one of our agricultural exhibitions last fall in relation to the Agricultural College, which has not been noticed by the press. It was a very remarkable speech, but it was a very

illogical speech. It was a speech made, I think, for buncombe; but Mr. Buncombe was not there to hear. The audience did not happen to be opposed to the Agricultural College. The first position taken was, that the Agricultural College would prove a failure; and the next was, that an Agricultural College was impracticable. Well, why should an Agricultural College be more impracticable than a law school, a school of medicine, or a commercial school? But then gentlemen who read, who know anything of the history of agricultural science and literature in Europe, know that the lights of Europe, practical and scientific, have originated in those schools. It was said in this speech that if young men were educated at the Agricultural College they would not follow farming. That has not been found to be the fact in Europe. Agricultural science—practical agricultural knowledge—is in demand in Europe; and those who have graduated from the agricultural schools there have become most valuable stewards on large estates; have become lecturers and writers; in short, have become the lights of European agriculture. To be sure, some young men who study law or medicine abandon the profession; but generally, a man who adopts a profession devotes himself to it, no matter how disagreeable it may be in some respects. See what Professor Agassiz does for the cause of science. You could not find one Irishman in a hundred who would go through what he does to obtain accurate information. Will men who undertake to learn the science of agriculture be any more likely to abandon their purpose than the lawyer or doctor?

Again, he said, teachers could not be obtained. Pray tell us how teachers are obtained in law and medicine? Do they spring up out of the ground? Are they spontaneous, like the trees, or have they been educated? Then he said further, (showing himself very illogical,) the mass of the people could not be made scientific. Well, I ask, applying the same means to the same ends, is it not as easy to make one hundred men scientific as one man? But he says, the utmost that can be done is to have some scientific lecturers go round among the people and teach the elementary principles that the people may adopt. Now, pray tell us where these lecturers and scientific teachers are to come from, who are to go round among the community and give that instruction which the ex-governor thought

was so necessary? Are they coming from the law schools, the schools of medicine, or the commercial schools? Are they coming from Harvard College? Is there a professorship of agriculture there? Pray tell us where they are to come from. They have got to be made, like the teachers of every other science. We have got the machinery to manufacture them, and all we want is to put it at work. We cannot, of course, start off in an agricultural course as Harvard College does in its literary course, but we can make a beginning. The only conclusion to which I can come, is that we can never have these desirable teachers and scientific lecturers unless we have some special school for their instruction; and I do not know of any special school better adapted to furnish the community with that very necessary class of men which the ex-governor considers indispensable, than the very college which he says is a failure and must be abandoned. I would like to have the ex-governor explain how he would get these teachers, unless we have some college to make them.

Again, he said that the graduates of the Agricultural College would not find remunerative employment. I ask, what literary labor, what scientific labor, is in greater demand, and what men enjoy wider fame or are more extensively read, than men deeply versed both in the science and practice of agriculture? I know no literary labor, no scientific attainments, that can command better prices than attainments in agricultural science and practical agriculture. I was surprised that a gentleman who had been so highly honored in Massachusetts should make a speech so well becoming the dark ages.

Professor AGASSIZ. Mr. Meriam made one remark to which I should like to reply. I believe that a negative result never destroys a positive experiment. The influence of a first copulation has been tested in so many cases, that the absence of such influence, even in a great many cases, would not show that it does not occur. Of course, when it is affirmed (and I will presently give the facts on which the assertion rests,) that the first copulation has an influence upon the character of the following generation, it is not maintained that fecundation is done forever in that first connection of the sexes, or that whatever copulations may take place afterwards are to be always influenced by that, but it has been ascertained in so many

instances, with reference to so many animals, in such different countries, and in such different ages, that the effect of a first copulation is felt, not only in the product resulting from that connection, but in the products which result from subsequent copulations, that the fact cannot be denied. If we take it historically it is a thing which was known to the ancients ; it is a thing which was known to the Jews, and so well known, that in their law it was incorporated in this form—that if a woman lost her husband, she was bound to marry her husband's brother, and the children resulting from that second marriage were to be the first man's children ; and the laws of inheritance of Palestine were based on the fact, that there was such an unmistakable impress made upon the woman by the first connection she ever had, that it was not much out of the way to consider that her children, even by a second husband, belonged in a certain way to that first dead husband, who had nothing to do, apparently, with the procreation of the later children. But let us let Jewish law alone, and come to animals ; and I will mention some facts of which I have special cognizance. A mare was covered the first time by a zebra—an animal of a character never to be mistaken—it is a horse with transverse stripes over the body and a black bar along the middle line of the back. The offspring of that connection was a mule, a half-breed between a zebra and a mare. After that, that mare had colts from a horse, and they were striped. Whence came those stripes ? Certainly not from the second copulation, for after the birth of the first offspring, that mare never saw another zebra ; but when she was put to a horse, and had a second colt, that colt was striped. I have seen, in Mobile, the offspring of a mare, which had been put to a donkey, and which had bred a mule first ; and afterwards she was put to a horse and had a colt, which had a black bar along the back. That was certainly a mark of the donkey. We have no horse which has never had that influence with that distinct longitudinal bar along the back and cross-bar over the shoulder. That colt, born from a mare by a horse, which mare had had a donkey before, I have seen myself. So here we have an instance where the effect of a first connection is unmistakable. I have seen examples of the same kind in dogs, within my own personal experience. A bitch of one breed, connected with a dog

of another breed, having in the first litter pups which resembled some of them the mother and some the father, in a second litter, by a dog of another breed, had pups not only like the mother, and like the second father, but like the first father too. Here, then, you see again the unquestionable influence. I do not say that I do not know of a large number of cases where the influence of the first male is not perceived in the subsequent offspring, and it may often not be perceived at all, because of the great resemblance of the second father to the first; but whether or not the cases are more numerous than I am aware of where no effect at all is felt, it cannot be denied that there are cases where the effect is unmistakable; and supposing that only ten per cent. of animals receive by their first connection an influence which is felt in the following offspring, would it not be well to save a valuable animal from the possibility of being subjected to a bad influence, to be carried through life, by securing for the first male an animal which should, at all events, not contaminate the female, and bring in the possibility of bad offspring, in consequence of that unquestionable influence which the first male has, possibly, not necessarily, on future production?

Mr. MERIAM. The dog is the most uncertain of all animals to experiment with. I could state probably twenty experiments in my own experience as a breeder, covering over forty years, as closely observing as I am capable of, where no such influence was perceived. But speaking of mules, one evening I was present where this subject was discussed, and one gentleman, from Kentucky, distinguished for his scientific attainments, and a close observer, said he did not believe anything in it. "In our neighborhood," said he, "we put our young mares to jacks. When they get more mature, we then breed them to our thoroughbred horses, and out of a large number of horses bred from mares which for their first foal had had a mule, I have never seen a trace, in the hair, the form of head, or anything, of the donkey." Now, no amount of general reasoning, no amount of theorizing, would shake the result of my experiments a particle. I do not believe there is anything in it. The doctrine is, that impregnated once is impregnated forever; that the influence of the first impregnation extends down through future offspring. I have tried that on fowls of different kinds, and

various animals, and my occupation for forty years has been that of a breeder, and I have not seen a trace of it. I am confident that there is no person in this county capable of speaking more confidently or truthfully than Colonel Jacques, and he thought there was nothing in it.

Professor AGASSIZ. Facts are facts, and they are very stubborn things. If I mention facts which I know, and you have facts which are different, your negative facts will not annihilate my positive facts. Mine are positive results. I mentioned experiments with dogs. I have taken care that these animals did not wander. I am not so careless, when I am making an experiment, as to allow the animal that is experimented upon to wander about and have connection with animals unseen. It is kept in confinement. Now, when in such a case I obtain in the second litter pups which have marks of the first father, that is a fact; it is no theory. That bitch has not given birth to pups like her first male in order to please me, but just because she had been influenced that way, and she had to bring what her belly contained. Those were the things I saw, and I cannot say any more about it.

JAMES THOMPSON, of Nantucket. A fact has just come to my mind which illustrates what the chairman has said in reference to the breeding of animals. Three or four years ago there was a ship cast away on our island, on board of which there was a very fine bitch—a large, beautiful animal, and a perfect water dog. A gentleman on the island had a large black Newfoundland dog that was always playing in the water. They were coupled together carefully, and the bitch kept clear from every other dog for months afterwards, so that it should be a sure thing. The result was a litter of five pups, only one of which was worth the hair that was on them for water. You could not drive them into the water; you could not teach them to go into the water. These animals belonged to two distinct families, apparently, and were brought together under such circumstances as confirm the statement that it is best to continue breeding in the family as much as possible.

I want to say a few words in regard to the breeding of cattle and the stocking of farms. I do not wish to particularize any breed of cattle, and I would not, only it seems to me that it is not fair for us to go away with not a word said in favor of other

breeds than the two alluded to. I am in favor of all breeds of cattle upon the farm, just as the chairman has said. I do not believe that the growing of beef, in the State of Massachusetts especially, is of any advantage to the farmer generally. The subject was brought into the Board of Agriculture a few years ago, and a committee appointed, who investigated the matter for a whole year; and the result of their investigation was, that it cost about \$29 to bring a heifer to three years old, and she would sell for \$29.50. They proved by facts obtained throughout the Commonwealth that a steer, at three years old, cost about \$48, on the average, and would bring about \$49. Now, if these are facts, in reference to the production of beef in this Commonwealth, what is the use of our always bearing testimony to the value of a breed of animals that is good for beef purposes, when we want them for dairy purposes? As the chairman has said, we want one kind of animals for one branch of the dairy business, and another kind for another branch; one set of animals for one locality, and another for another locality. Every farmer should try to ascertain what his farm is adapted to produce. If a manufacturer were going to produce carpets or woollen goods, he certainly would not put in cotton machinery.

The first thing I attempted to do, to fit my farm to make a profitable income upon it, was to ascertain what kind of stock would produce what I wanted to produce to the best advantage,—that was butter, the whole year round. Then I wanted to produce the crops that would feed those animals and produce the greatest results in the line of manufacture which I wanted to get from them; these were hay and roots. I first experimented with one cow that I had always had. Then I tried a Jersey cow, three years old, and I had 386 pounds of butter in one year. Last year, I had from three Jersey cows 906 pounds 3 ounces of butter. This year, my man at the farm, or his wife, has produced 14 pounds of butter a week, and even up to 16 pounds, from one cow. Twenty-one pounds were put up from two cows in one week, in the month of November, and they furnished milk for three families and butter for two families besides; so that it was really raising 28 pounds of butter in a week from two cows, in the month of November. Those cows stand in my barn to-day. I do not find that they eat more than common cows. I feed them upon roots and hay, and let

them do their own grinding. Why does a physician tell his patient that he must not bolt his food—that he must not have his food in such a condition that it will go into his stomach too readily? He wants him to masticate it, in order that the salivary glands may operate, and the saliva fit that food to go to the stomach and be digested. I want to know why a calf, when you are raising him upon skimmed milk, needs a rope hanging over his pen to suck, or he will suck the ears of the other calves, or anything else? Because it is natural for him to produce the saliva from his mouth, when he is nursing his mother, to go into his stomach and assist in digesting the food. I have looked into this matter with my young heifers. I feed them in the morning with ears of corn, three and a half or four quarts apiece, and it produces a great deal of saliva in the mouth. They do not have over ten pounds of hay a day, and they keep well, look well, are fat and hearty, and I have never known one of them to have a sick day. At noon, I give them a couple of quarts of corn apiece, and two quarts of carrots. A horse, weighing 1,160 pounds, has two quarts of shorts at night, from six to eight pounds of long hay, with this fine feed upon it; in the morning, he has perhaps four pounds of hay, with the corn on the ear. That is all the feed that my horses have to work upon.

I endeavor to encourage a disposition in my cows that are in milk to eat all the time. I want to give them food that they cannot fill themselves with readily. In the morning, they have fresh hay, or else go to grass. To be sure, everything that I can bring nearest to grass for a milch cow will produce the most milk. I do not believe in giving them food which will not distend the stomach. When I have cut the food, I have found that the stomach of the cow was not so well distended as when I have fed it uncut. I want to have the abdomen distended as much as possible, and have the cow eat as much food as she can get into it.

As to breeds of cattle, I have nothing to say for one or another, further than the results I have stated. It is for every man to select the breed best adapted to the capacity and wants of his farm, and which will give him the greatest results.

Mr. FLINT. The chairman referred to one thing which I think should receive a little more attention than it has. I .

allude to what he said respecting cotton-seed meal. It seems to me, from what I know of it, and from what I know of the opinions of practical farmers in regard to it, that his experience does not correspond with the general results obtained in feeding cotton-seed meal; and it may arise from the fact that his experiments were made soon after the preparation of cotton-seed meal was begun, and not within the last few years. It seems to me that the article which he used must have been different from that which is used now. It is known to most farmers, perhaps, that when it was first brought into the market, it was unhulled, undecorticated, and there were some positively injurious results which followed from feeding that article. Within the last few years, however, it has been decorticated, the hull has been taken off, and it has gone into the market. Now, Dr. Loring's experiments were made several years ago, if I am not mistaken, and I am inclined to think that the article was different from that which is in the market at the present day. At any rate, it is the only instance that has come to my knowledge where the result has not been satisfactory in a very high degree. It is not a week since I heard a practical farmer, speaking of its effect on dairy cows, say that the increase of milk was very perceptible, to the extent of two or three quarts, within a very few days. I allude to this point now, in order to ascertain if any other farmer has found any objectionable results to arise from its use.

An acquaintance of mine wanted to reduce a very rough, bushy pasture, too rocky to plough, and the question was, how to do it. Pasturing cows upon it, which had been done for many years, did not effect his object, and I advised him to stock it very heavily with sheep—twice as heavily, perhaps, as the pasture would naturally and easily carry—and then to feed the sheep with a very small amount of cotton-seed meal once or twice a day. He acted upon my advice, and put something like sixty-five sheep upon a seventeen acre pasture—not more than six or eight acres of which were open pasture, the rest being bushes. I have watched that experiment very carefully. It was made, in fact, under my own eye. He has fed some four or five tons of cotton-seed meal to these sheep and to another flock of fatting wethers, where I have had an opportunity to see the result, and so far as I can judge from my own

observation it has been entirely and thoroughly satisfactory. The sheep have been kept in good store condition—it was not his object to fat them, and he fed them only a small amount of the meal, considering the number of animals and the character of the pasture. The sheep have browsed down the brush, so that in the course of two or three years, I am quite sure that very rough pasture will be reduced into a perfectly satisfactory condition, for a rocky pasture, and with greater economy than it could be done in any other way. He paid \$45 a ton for the cotton-seed meal, and fed them cheaper than he could with any other substance that I know of—any other substance, I mean, bought outside of the farm. He took a great deal of pains to inquire the cost of refuse beans, damaged Indian corn, etc., and found that cotton-seed meal, at \$45 a ton, with the results it produced, was a more economical food than any other substance. I have known a great many instances where dairy farmers, feeding for the production of milk, have used cotton-seed meal with very great advantage and with very great satisfaction.

And this result corresponds not only with practical experience, but with the investigations and deductions of science. Cotton-seed meal is classed by feeders with linseed meal, though chemists and scientific dairymen claim for it a superiority. When fed to milch cows it increases the quantity and improves the quality of the milk. It is a rapid flesh-former, and the manure of the yard where it is fed is of a superior quality.

Prof. Voelcker, the distinguished chemist of the Royal Agricultural Society, having given it a thorough and careful scientific analysis and investigation, arrives at the following conclusions:

1st. The proportion of oil in all the specimens is higher than in the best linseed-cake, in which it is rarely more than 12 per cent., and 10 per cent. may be taken as the average. As a supplier of food, cotton-cake is therefore superior to linseed-cake.

2d. The amount of oil in the several specimens differs to the extent of $5\frac{1}{2}$ per cent.—say from 13.50 to 19.19.

3d. Decorticated cake contains a very high and much larger percentage of flesh-forming matters than linseed-cake, and it is therefore proper to give to young stock and milch cows. The dung also is very valuable.

4th. In comparison with linseed, there is less mucilage and other respiratory matter in cotton-cake. This is compensated by the larger amount of oil.

5th. The proportion of indigestible woody fibre in decorticated cotton-cake is very small, and not larger than in the best linseed-cake.

6th. And lastly, it may be observed that the ash of cotton-cake is rich in bony materials, and amounts to about the same quantity as is contained in other oily cakes.

Now, after all the scientific investigation which has been bestowed upon it, resulting in all cases so strongly in its favor, and after the approval of so many practical men who have used it satisfactorily and with economy for years in feeding it to all classes of stock, it seems to me we have a right to infer that its failure to produce satisfactory results in particular cases may be ascribed to over-feeding—to feeding in too large quantities. We know very well that any rich food, like Indian meal, for instance, when injudiciously fed, will prove too stimulating and injure the animal. But this is not the fault of the article, but the necessary consequence of want of judgment and care.

EVENING SESSION.

The Board met at 7 o'clock. The chair was occupied by Hon. E. W. BULL, who stated that President CLARK, of the Agricultural College, who had been announced as the speaker for the evening, had been detained by his duties at the College, and that his place would be supplied by Hon. LEVI STOCKBRIDGE.

ADDRESS OF MR. STOCKBRIDGE.

Gentlemen of the Board,—I desire to ask your attention to the few remarks which I may make as a plea for the agriculture of Massachusetts, and for the agricultural education of the farmers of Massachusetts and the Massachusetts Agricultural College. You are by law the overseers of that institution. Being connected with it temporarily, as one of its officers, I have been upon the ground ever since the first blow was struck the present year towards putting up the buildings and getting the institution in order for the reception of students; and I have been, to say the least, a very attentive observer of all that has taken place there. I can, therefore, speak of the facts as many others, who are equally interested but who were not upon the ground, cannot speak.

In the first place, I find there is a great deal of ignorance in relation to the institution. Why, a man who has a son in the institution told me in this room, to-night, that he had hardly any idea that there was such an institution in the State, or that there was to be one, before his son started to go to Amherst. It is so, generally, throughout the Commonwealth. The people have had no idea that we were really to have an Agricultural College, notwithstanding the talk there has been about it, and notwithstanding the money that has been appropriated for it. They have had the idea that there would be no college; that it was all talk, and nothing else. Now, gentlemen, I can say that there is an Agricultural College in Massachusetts. In the first place, it is located, as you know, in the town of Amherst. We have there, in my judgment, a beautiful farm for the institution, of 400 acres, finely located in the valley of the Connecticut, with a great variety of soil. We have alluvial soil, with clay underlying it; we have soil of a lighter cast, with quartz underlying it; we have soil entirely free from stone, and soil like some of your Middlesex County farms which we have passed through to-day, covered with stone, and hard and difficult of cultivation. The land is rolling, interspersed with brooks and streams; bounded on one side by quite a river, and there are numerous springs upon the land, giving us great water privileges. These will necessitate a large amount of under-draining. The soil is fertile—there is no mistake about that. It is well adapted to the growth of corn and rye. Wheat and tobacco, (which is contraband so far as the farm is concerned,) grow on that soil finely. The farm, although not very productive, is yet a farm which, on the whole, has never been run out or abused by over-cropping. Very few of those acres have been over-cropped, and are what we call exhausted land. The trouble is, it has been neglected. It is covered with brush. Last spring there was a hedge about twelve feet wide all along the fenced part of the farm, giving it a very offensive aspect, which disappeared as if by magic, the present year. I say, therefore, we have got a farm, we have got a college, and we have the encouraging feeling that we may possibly succeed.

Another thing—which I should have said first—we are located in a spot entirely accessible to all God's creation. It has been said that you could not get to Amherst; or, if you

managed to get there, you could not get away. Now, we are within three-quarters of a mile of a railroad depot, at which six trains a day stop, so that we have abundant opportunity to go there and to get away. There is no trouble in getting to Amherst or in getting away.

I located myself upon the farm the first of April. At that time, we had no buildings; the first blow, in fact, had not been struck. We have erected the past season, in the first place, a large dormitory building, four stories high, 100×50 . The lower story is divided into recitation-room, reading-room, and cabinet; the three upper stories are rooms for the students, of which we have twenty-four, designed for two students each; giving each two students a sitting-room or parlor, 15×16 ; each of them a fine bed-room; each of them a fine clothes-press or wardrobe. These are the accommodations we give our students. We have erected a laboratory, so-called, in which is to be placed the chemical apparatus of the professor of chemistry, and which is to be the working chemical-room. In the upper story, we have a dining-hall, 50×16 , where it is proposed by the trustees of the institution, that all the boys shall take their meals, if they desire it. We have erected a convenient botanical building, with a recitation-room for the class in botany, on the lower floor, and a specimen-room for the reception of all sorts of specimens in the hall above it. We have erected a large conservatory, 100×70 , with propagating pits, and all the conveniences of the best modern houses.

These are the buildings which have been erected during the past year. You will see from what I have stated with reference to our dormitory building, that the trustees have laid a plan for a college of forty-eight students, and yet to-day, the college building is full. Our term commenced the 2d of October, and we have a Freshman class of forty-six, with the prospect of double the number for the next class. One of the rooms is occupied by a professor, so that we are now full.

The question is often asked, "What are the terms of admission?" The candidate for admission is examined in the common English branches, reading, writing, spelling, geography, and arithmetic, and we mean that the examination shall be thorough and exhaustive; that the students shall be thorough in those branches before they come there. We do not examine

them in Latin or Greek, for those languages are not taught at the institution. We teach geometry, chemistry, physiology, and practical agriculture ; and some of our students, this term, have taken German.

The next question you will ask me is, "What have the boys been doing in agriculture ? What have the boys been taught ?" Before the school commenced, the plan was adopted that every young man who came there should be taught to work upon the land. Some, perhaps, knew how to work, some did not ; some had no sort of acquaintance with agricultural operations. The plan was adopted, I say, that every young man who came there should work upon the land six hours in a week ; that the whole class should work, upon the land, as a part of their regular school education, two hours on Monday, two on Wednesday, and two on Friday. And then we held out the inducement, that if there were any young men in the Commonwealth who desired a first-rate intellectual education and thorough discipline (for that the trustees designed to give,) they would give them wages for just such an amount of labor as they could perform, without detriment to their studies. The consequence has been, that we have some twenty students who have been at work during the entire term for wages, from one up to four hours a day, besides their two hours work with the class every other day in the week.

Then the question comes, "How do you make labor and study go together ?" I suppose that question will be asked me, for it often is. If I should answer it in the off-hand way I sometimes do, I should say, "first-rate." I am ready to acknowledge, that before our students appeared there, I had many misgivings in relation to the question of labor. I knew the responsibility would fall upon me, and I dreaded to have the day come when I should have from thirty to fifty young men there, and be required every other day to take them upon the land, and make a business of teaching them to work—in the first place, planning the work ; and, in the second place, seeing that they did the work like men, systematically and regularly. But there has been no trouble about it ; it has come as a matter of course, without any difficulty whatever. Having established the system, it has worked like a charm.

Of course, in these hours of labor, we are on discipline. It is regular business, as much as the inside work of the institution. At the appointed hour the roll is called, and every student is required to be there unless he has a good excuse, from sickness or some other cause. And I do not find them playing baby; I do not find them talking off; I do not find them trying to shirk the duty. One reason, I suppose, is this, that the best scholars in the school, those who regularly mark highest in their studies, are the very best men we have in our labor companies. They take hold, and then all the rest, as it were by their influence, follow.

“What have you set them about?” Well, they came at a very unpropitious time of the year. They came in the fall. I can imagine that I could interest them if they came in April, when we were planting our gardens, and when everything was starting with the new life of spring; but when they came in the fall, when our work was the hardest and least interesting, I did not know what might be the result. Now, I have put those boys upon the hardest work—upon everything that has to be done upon a farm. I have made no selection, taking that which would be the nicest or the easiest, but they have been called upon to do in these hours of labor, whatever there was to be done. They have husked all our corn, some 1,800 bushels; dug all our potatoes and all our root-crops; spread all our manure; and everything these boys did with the utmost cheerfulness and alacrity. They took hold and worked like men.

When the crops were harvested, what next? We had upon the farm some old orchards, whose day had gone by. The trees had become worthless, and the boys were set to work digging round them, digging up the roots, and taking the tree down, stem, root and branch. They have made a clean sweep of something like five acres, cutting up every tree in good shape. Then, as I have said, our land was covered with bushes, our pastures were overrun with brush. A large number of bush-cutters were purchased, and the boys were turned out and took out the bushes by the roots. They went into it with alacrity, and apparent pleasure, and something like nine acres have been cleared of every bush by the boys.

I can report, then, in relation to this matter of labor, that the system works well; there has been no difficulty whatever. Of

course we have boys of different characters and different capacities. Some are lively, some are smart, and some are the other way ; but as a whole—as a class—they have far exceeded our anticipations. No fault can be found with them. The thing is a perfect success. But “one swallow does not make a summer,” and one term cannot finally settle the question. I say that; for to-day it is settled. I find, on comparing the marks of the professor of agriculture with the marks of the professors in other branches, that the two correspond identically ; that the boy who has a clean record with the professor of agriculture marks highest in every other department ; it is invariable.

Another question you will ask, is, “What have you taught the boys in relation to agriculture ?” So far as my teaching is concerned, I have taught them what the Board of Agriculture have taught me. That I call pretty good teaching. Of course we had no text-books on agriculture there. In the next place, we had no system of agriculture there. I am sorry to say that here in Massachusetts to-day, although the Board of Agriculture has been at work for fifteen years, we have no system of agriculture—nothing that a man can teach a class of students and say, “This is the established, approved system of agriculture for Massachusetts.” We have no such thing. Commencing with the soil, our course of instruction has been to give its origin ; the manner in which it was prepared for the purposes of cropping ; the material in the soil by which plant-food is formed ; then the influences in the soil which go to make that raw material up into food for plants ; then the manner in which the plants themselves take up and appropriate that food to their own uses, and form their bodies and their roots from it ; next the effect of cropping upon the soil itself—what the process is, what the effect upon the soil is, and what the condition of the soil is after a course of cropping, running down to exhaustion ; next the methods by which the fertility of the soil can be increased ; or how, without manuring, the soil can be restored from barrenness to fertility ; next ploughing in green crops as one method, under-draining, irrigation, the use of muck, ploughing and stirring the soil, as sources of fertility ; then animal manures, their character, their composition, how they act in the soil, chemically, mechanically, &c. That has been the course of instruction in the institution, and that is as far as

we have got; and if I have learned anything, I think the young men have learned something in return, of agriculture, both theoretically and practically.

I must say to you, gentlemen, familiar as you are with my views in relation to an agricultural school in Massachusetts, that from my knowledge of the people of this State, I feel assured that the Massachusetts Agricultural College will be a perfect success. Yet I have no very great amount of confidence in the men who now have that institution in charge; but my confidence is based on the knowledge I have that there is a feeling abroad throughout the Commonwealth that such an institution is needed. The constant inquiry which is being made, and which is spreading and growing more and more, day by day, convinces me that the people of the Commonwealth have been educated by the Board of Agriculture up to the point that they feel the need of an institution to educate the young men of the Commonwealth for agricultural pursuits. And here is my faith—not in the men who are there to-day, for they may make a failure of it; but in the people of the Commonwealth, and the felt need of the people of the Commonwealth for an institution of the kind. The men who are there to-day may fail of success, but Massachusetts will find men who will make a success of it; for those men feel that whenever the old Commonwealth wants men she will find them. True, we have no books to-day such as that institution should have to instruct us in agriculture, but I have faith that somebody in Massachusetts will yet make the very book we need. There is no question about that. We have no system of agriculture to be taught there, but I have faith in the people of the old Commonwealth, or in some of the men of the old Commonwealth, that they will make a system of agriculture that shall be taught there, and which shall be just the system we need.

Then, I say, I have faith in the permanent success of that institution. I believe that an Agricultural College will succeed in Massachusetts if it fails in every other State in the Union; for there are elements of success in our State which do not exist anywhere else. First, because our soil and climate are such that, competing with the great West, we are from necessity driven to a more intelligent course of cultivation. That is one reason why an Agricultural College will succeed in Massachu-

setts, if it fails everywhere else. Another reason is this: That this Board of Agriculture have been for fifteen long years or thereabouts at work to educate the people of the Commonwealth up to the point that they shall feel the need of a school of this kind. This college could not have been started twenty years ago with any prospect of success. Out of the desire of a few individuals for an Agricultural College grew the Board of Agriculture. That Board of Agriculture have been at work educating the people, and they now feel an interest in the school which will insure its perfect success.

Another thing. Through you, gentleman, as the delegates of the agricultural societies of the State, the Massachusetts Agricultural College is linked to every farmer in the Commonwealth. Your societies will look to the Agricultural College eventually. You yourselves, while occupying the position you now do, and your successors after you, will look after the Agricultural College; and there will be a reciprocal influence from the college to the farmers, and from the farmers to the college, which will be highly advantageous, I trust, to both.

I will not occupy the time any further, but if any member of the Board desires to ask any question in relation to the institution, I will answer it with pleasure, if I can.

Professor AGASSIZ. I have listened with the greatest interest to the statements concerning the condition of the Agricultural College, and I have no doubt, from what you have said, that a success has been accomplished—a success which will continue and increase, and do much to promote the welfare of the State. I deeply sympathize with your efforts and with your success. I know what it is for a teacher to meet with success. It is his life, and it is that which stimulates him to greater effort. I want, at an early stage of the progress of the college, that every obstacle should be removed from its path, and that all the connections which have not yet been made should be so made as to secure the more extensive usefulness of the college; therefore I should like to ask you a few questions.

We have now in the State an established system of common schools; we have in the State an established system of high schools; we have in the State a number of colleges; we have several normal schools which educate teachers for these various schools. Now here is a new kind of school introduced into this

general system of practical education, connected with the various modes of educating the people at large. We have scientific schools, also, which have a practical bearing upon the progress of the higher branches of the mechanic arts and industry and scientific research. Now, in what relation do you expect that the Agricultural College will stand to the common school system; for, from what you say, I am convinced that you will be overrun with students, and will be obliged to enlarge your establishment in order to accommodate the applicants? The question will come up very soon, How are you to meet the applications from the large number of students who will prefer the education which you give to that of the high schools, or perhaps to that of some of the more advanced schools which do not reach the level of high schools? Have you any idea how the agricultural colleges which exist in other States are to be provided with all the professors needed in the various departments, and how do you think it will be possible to educate the teachers for all these schools? In other words, what kind of normal school for agricultural teachers do you contemplate in the future? for with the growth of your school, and with the growth of other schools throughout the United States, this will become as imperative a demand as normal schools have become a demand with reference to our common schools. From the broad and comprehensive plan you have laid before us, from the evidence you have given us that the very life of the majority of the public is interested in the enlargement of this agricultural education, I do not suppose that in your mind you conceive the present dimensions of the college to be its limit; and therefore I have hit, I believe, upon the very point—the very prospect which the future must open. A wise man ought to look ahead in order not to be cramped when the time comes.

Mr. STOCKBRIDGE. In reply your first question, “What part the Agricultural College is to play in the educational system of Massachusetts?” I will say, that from my stand point (I may be incorrect,) it will occupy the same position in relation to the general system of education in Massachusetts that Cambridge College does. It is an institution independent of the general school system, exactly as Williams or Amherst or Harvard is. Although it has been, and will be, I trust, aided by the State, it does not form a part of the normal nor common school system

of the State, any more than Cambridge, Amherst or Williams, all of which have been aided by the State.

The next question is, how shall we obtain teachers for our own Agricultural College, and how shall teachers be obtained by all the other Agricultural Colleges of the nation, that are now springing into existence. That is a question that was asked eight or ten years ago. I remember, in 1858, when I, with some others, threw the Agricultural College ball into the legislature, all hands began to knock it round with their clubs, and the club that hit it hardest was, "You haven't anybody who has been educated to teach!" The answer was, "You must commence in the common schools. The common school teachers must teach agriculture." That idea was started in 1860, or somewhere about there. Now, I must say that I am just as much in the dark to-day, as then. I do not know how we are to get the men, but I have faith in the men of Massachusetts, that when a demand is made, the men will be found. It was only last week that a gentleman from Iowa came to Amherst, and said, "We are after men to start a college in Iowa, and we have come to Massachusetts for them." I said, "Wait four years. We are training men for your Iowa college. I have no doubt we shall make some good ones for you." That is all I could say to him. I know we shall make some good men, if they will only wait long enough. We have the raw material; I believe somebody will work it up.

Professor AGASSIZ. I believe there is an interest in agricultural, scientific, commercial and military education, which is now scattered, but which might be concentrated and made to work much more effectively than now. That is what I wish to reach. My question was with reference to the possibility of contriving some way by which the efforts of the friends of these various educational institutions, which are now organized in different parts of this State and throughout the country, may be combined, so that they shall help each other. In the scientific school at Cambridge, we are just as much at a loss to know what we shall do as you probably are, in reference to the future when your pupils shall be increased. Our means are entirely insufficient, and I suppose yours are entirely insufficient; and I think the time has come when we should make it known to the community how in this age—which is an age in which all

education is changing, in which scholastic and monastic education is vanishing, in which even literary education is waning, to make room for more practical, for more active, for more scientific instruction—I say I think the time has come when we should make it known to the community, how they are to move in that direction. I hold that even our common school education, admirable as it is, tends too much to book learning—just as much too much as our colleges do. The cry against mere book learning in the colleges is already loud enough, but it should not reach the college only ; it should reach the common schools also, because there is a great deal of study of things that might be introduced there. If the children of all the common schools could be taught to recognize and know by sight all the stones upon which they tread ; if they could be taught to know by sight all the plants and animals which are found in their neighborhood, they would come better prepared to your agricultural school than they do, and they would be equally better prepared to come to our scientific school in Cambridge, or to go anywhere. The foundation would be laid of a better preparation for that practical training which our age demands. I think that agricultural colleges will have somewhat the effect to lead in that direction ; and we should, I think, from all sides, press upon the community the need of learning in the direction in which the wants of the active community go, not merely in the direction in which an antiquated practice has led us thus far. I would not lessen in any way the value of scholarly culture. I would not disgrace my mother—and letters have been my mother ; I would not disgrace culture in ancient lore even, impractical as it is ; but I think in the methods by which these things are taught, there are savings to be made in time which could be applied to things far more useful. When our boys give so many hours to the study of Greek and Latin grammar, I think that that is practically useless, because they could learn a great deal more Greek and Latin, in a way which would last better, even with less of that kind of teaching ; and a little more natural history, and a little more of foreign modern languages, would certainly be a very useful substitute. I think that there lies the need of co-operation between all these institutions which have sprung up to meet wants in a direction which schools and colleges, as they have been thus far, have not

supplied. I look upon the Agricultural College as an auxiliary now to the scientific schools of our colleges; and I hope these scientific schools will be friends of all these efforts in the direction of the Agricultural College.

Mr. STOCKBRIDGE. In relation to making the knowledge of science practical, I think the faculty and trustees of the Agricultural College entertain views which are entirely in harmony with yours. While they would desire to cultivate high science there—while they desire to secure men as teachers who are known as men of high science—they desire also to secure men who have the talent to make that science entirely practical; to apply it to the common pursuits of life, especially agriculture. I believe their views in this respect are in harmony with yours.

In relation to the matter of fitting men for teachers of the Agricultural College, if it is your idea that there might be a school inaugurated at Cambridge, where we have the greatest advantages, where almost everything that relates to human science is gathered, which should fit men to be scientific teachers at our agricultural schools, I am not certain but that is just what the age demands, and that Cambridge itself might be the place to educate the men whom we have failed to see coming.

CHARLES G. DAVIS, of Plymouth. I do not know whether it is the intention of the Board that there shall be a discussion upon this subject on which we have been addressed to-night, but it seems to me we cannot better employ our time while we are here than by dealing with some of the questions which have been suggested by the learned gentleman who has just taken his seat, with regard to the Agricultural College—its wants and our wants.

It seems to me that the most satisfactory answer to the question which the gentleman asks with regard to the future, and with regard to the means by which teachers should be hereafter supplied, is almost one of faith. I cannot say that I believe exactly in destiny, but I believe in development; and I think the time has come when we who are assembled here, at least, are grounded in the belief, are grounded in the faith, that teaching is hereafter to be more practically applied, and at the same time more useful than it has been heretofore, in more scholastic times. I think, with the example of the gentleman

himself before us, who has educated himself, who has been to no normal school, but the school of nature herself, and who has fitted himself to become the teacher of all mankind, we may rest assured in the faith that the American mind, if not taught by normal schools, will train itself into teaching. No better example occurs to my mind than that of the gentleman who has just sat down. I certainly can say for one—and I think my fellow-members upon the Board of Agriculture at that time will join me in saying—that with the knowledge we had of that fine Yankee common sense, that keen intelligence and that practical experience which the gentleman possessed, we did not expect, after all, when we selected him, that we should find him so well fitted for the practical task which he has taken upon himself, and which, so far, he has proved himself so well qualified to perform. When, too, Prof. Chadbourne was selected as president of the college—a man very little known to the mass of the people of the Commonwealth—it seemed to us, for a time, as if he was developing himself, almost as by the providence of God, for the purpose for which he was appointed. I think we can rest assured, therefore, if there is teaching to be done, that teachers will come; just as we can say that there was teaching before normal schools existed.

In saying this, I do not mean to intimate for a moment that we have no need of training for teachers; because I think the great danger in any college is, that the teachers will become scholars merely, and will not have the ability to apply their teaching in their own personal experience. The men who sustain the idea of this college are men who do not feel as we do who have thought more upon the subject, so much the necessity of more accurate scientific knowledge, as they did the desire that there should be a place where farmers' boys could be taught farming in a more general sense. I agree that that is the great want of the farmers of the Commonwealth; but in saying that, I do not mean to suggest that this is all that is needed; but I mean to suggest that this is what we felt, who were more nearly connected, as we supposed, with the wants of farmers and farmers' sons, to be the want in their minds; and it was for that reason that it was thought, more especially by the gentlemen connected with the Board of Agriculture, and more intimately associated with the agricultural societies of the Commonwealth,

that that want would be supplied, although it was very necessary that an equally great want, and a much higher one, that of a school of all the arts, should be met. It seems to me, therefore, that we have to thank Congress for putting those words, "practical manual labor," into the law. I think the sheet-anchor of this college, as applied to the wants of the farmer, rests in the practical application of science upon the spot, in so far as it can be done.

I was very glad to hear a gentleman associated so intimately with Harvard College as Prof. Agassiz, avow the sentiments which he expressed with regard to the importance of more practical teaching everywhere. I remember, sir, when I was at Cambridge (having had the honor of graduating at that institution,) that when I studied astronomy, I could not ask where a star was—it was against the law; it was *mathematics* that I was learning; it was my mind that was being trained. I could not ask to apply geometry or arithmetic to any part in surveying or architecture; it was mathematics I was studying; and my mind was cramped at the time—(not that my mind was any more exploring or any more inquisitive than others)—and I felt that the mind of the young man at Cambridge, in that course of mathematics—and to some extent it was true of all the other studies—was made to germinate, it began to burst, and then, in the very act of germination, it seemed as if it were cramped.

Now, I think that the people of the Commonwealth—not the scholiasts, not the mere scholars, of the Commonwealth, but the people of the Commonwealth, agree fully with the spirit and substance of the remarks of Dr. Bigelow in that most remarkable common-sense lecture which he gave some two years ago, I believe, in Boston. I think, if what are called literary colleges do not change their methods in some respects, there will be such a growth of institutions like the Agricultural College, that they will have to look out for themselves. I do not know, for one, that it was wise, so far as Amherst College was concerned, to encourage the location of an institution like this so near to her own borders, because I doubt very much whether the child may not be likelier than the mother in some early future day. But I think these scientific schools, the school of Technology in Boston, and the various groupings of men particularly inter-

ested in agriculture during the last fifteen years in the Commonwealth, are indications of this popular feeling, that Greek and Latin, sometime or other, are to be accomplishments; and not the means alone of training the youthful mind; and that mathematics, that geometry, that astronomy, as they are to be taught hereafter, are to be taught by men who are endeavoring practically to draw lightning from the skies, and devote knowledge to some use, rather than to the purpose merely of training the human mind.

But it seems to me that we here have something practical to do, if we agree in the hopes and the faith which have been expressed by the gentleman who has addressed us this evening. It is well known, and must have been perceived by the remarks made by our friend, that this College is now in a position where it must be dwarfed by the Commonwealth, and on the responsibility of the Commonwealth, or it must be allowed to grow; and I understand that the trustees propose to ask the legislature this winter for an appropriation for the purpose of building a dormitory which shall be sufficient at least to hold the next class, which, as has been suggested, will be as large, and probably larger, than the one which has already entered; and I think we, as gentlemen from various parts of the Commonwealth, can do no better practical work than by seeing the representatives and senators, with many of whom we are personally acquainted, and with so many of whom we can bring ourselves into contact, and ask them to assist us in obtaining such an appropriation. The State is now in a position from which, it seems to me, it cannot withdraw itself with honor; and while there will be, and should be, a very great pressure to reduce the expenditures of the Commonwealth, in all legitimate ways, this year, and for many coming years, probably, I do not see that there can be but one course for the Commonwealth to pursue, in this emergency, with regard to the Agricultural College, and that is, to give it a chance to breathe; and I hope, sir, that we may be able to exert, legitimately, such an influence upon the legislature as the gentleman who has put the question has so often done by his own personal eloquence and power, in behalf of the museum at Cambridge; and that it may result in such a grant to the college, as shall enable the trustees to make the necessary, almost indispensable, addition.

I rose, however, more particularly to move a vote of thanks to Prof. Stockbridge for his address, and for the information that he has been kind enough to give us this evening.

The motion was carried, unanimously, and the Board adjourned, to meet on Wednesday morning, at 9 o'clock.

SECOND DAY—MORNING SESSION.

The Board met at the hour assigned, and the consideration of the question of Cattle Husbandry was resumed, Captain MOORE, of Concord, occupying the chair.

J. M. SMITH, of Sunderland. I regard this question as one of the most important that can come before us. We discussed this question thoroughly at our meeting last year; our discussions have gone upon record; they have gone abroad throughout the Commonwealth; the people have read them eagerly, and they are looking to-day to learn what shall be result of our discussions here. I asked myself yesterday, What have we learned, or in what respect will our discussion be different from what it was last year? What new ideas have come to our minds; what advances have we made? What have we learned in breeding or in feeding? It is well known that the old patriarch Jacob knew how to breed so that his cattle were regularly streaked and speckled. Can it be said of us at the present day that we have brought breeding to that perfection? It is a question which is often asked by ourselves, "How shall we breed at will either of the sexes?" and I have an idea that even our own world-renowned Agassiz cannot answer that question. But it will be answered, and fully answered, I believe.

The question of feeding has properly come up here, and it is an important question. This subject is an important one, for the stock of cattle in a community or on a farm is an index of that section or that farm. The rearing of stock is an important branch of farming, and feeding is an important branch of raising and rearing stock. Any farmer can fill his barn with hay and grain, but not more than one in a hundred knows how to feed out that hay and grain to a profit; and I presume I can say that but one in five hundred knows how to feed out his crops so that he shall receive the market price for them.

I conclude, from my observation and experience, and from what I learned here yesterday, that the quality of the food affects the quality of the milk and also of the meat. It is well known that the child who nurses an intoxicated human mother, or rather inhuman mother, itself becomes intoxicated; and I have learned since I came here that one member of this Board has been complained of for violating the prohibitory law by feeding sweet apples to his cows and selling the milk. If such is the case—if the quality of the food affects the milk and the meat—we should be very careful what we feed to our cows. And we know that it is so; we know that the least change in our feed does affect the milk. I had this in my mind yesterday, when I asked Mr. Birnie the question if his object was to make butter or milk for the market. It seems to me that the feed which he gives his animals would be better for producing milk than butter. He recommended cabbages for cows. I recollect that a year ago I mentioned to the Board the fact, that having an opportunity at one time to purchase a lot of cabbages very cheap, I bought them and fed them freely to my cows, and the result was that they spoiled the butter. Butter-making is as much an object with us as milk-producing in other localities. One gentleman, a worthy member of the Board, who is a good farmer, and whose wife is one of the best of farmers' wives, and a good butter-maker, said he could not believe that cabbages or turnips would affect butter. He had occasion to call at my house afterwards, and brought me a little cake of butter, and asked me what I thought of that butter. I told him it was very good, but it smelt just as our butter did at the time I fed the cows cabbages and turnips. It was not perfectly sweet.

Now, I say that the feed which has been recommended here (we may call it trashy feed—it is light feed,) will produce the greatest quantity of milk, but it is not the feed which will produce the best and sweetest butter. Articles of food which will answer for one purpose, may not answer for another. It is not for me to say what particular stock shall be raised in any locality. It is not for the farmers of Berkshire or Franklin to say what stock shall be raised in Essex or Nantucket; and it is not for the farmers of Essex, or Barnstable, or Plymouth, to say what stock we shall breed on the Connecticut River. It is not for us to say that such and such articles are the best for dairy

purposes, when one dairy may be for producing milk, and another for producing butter. My idea is this, that milk consumers are not so difficult to please as butter consumers. Our chairman of yesterday, Dr. Loring, spoke of Indian meal, and any meal, which contains oil, as bad for dairy stock, and recommended feeding with wheat and rye bran, etc. My experience tells me that these are very good ; and I dwell upon this particularly, because his object is to produce milk, while mine is to make butter. My experience teaches me, that these kinds of food will tend to produce a large quantity of milk, but will not make a great deal of butter. If the farmers of the Connecticut River wished to produce butter, white as the driven snow, they would feed broom corn-seed and corn-stalks. It would take twenty-four hours to bring the butter, but it would be white, as I say, as the driven snow. If they wished to produce butter which should be hard and yellow, they would give a mixture of Indian corn-meal. I never have seen any ill-effects from feeding Indian corn-meal, given to dairy cows in small quantities, and my experience tells me that it will make better butter ; and it is admitted by all, I suppose, that it will make more flesh.

Now, in regard to cotton-seed meal. The assertion was made quite broadly that it was injurious to cattle, kept for dairy purposes. I have fed tons of it with satisfactory results. I have fed it the past summer to my dairy cows, and I am still feeding it with satisfaction ; and I shall continue to feed it until I see that it produces ill effects.

A MEMBER. How long have you used it ?

Mr. SMITH. Several years continuously. I remarked this morning, privately, that I had fed one cow—the best I have—year after year with cotton-seed meal, and she does as well as ever.

Dr. LORING. How much do you give ?

Mr. SMITH. Three or four quarts a day, perhaps, mixed with lighter feed. I am now feeding my dairy cows three quarts each, once a day, half cotton-seed meal and half cob meal, and once a day half a bushel of carrots each. I have one cow, which I am not [intending for dairy purposes, to which I have given a very much larger quantity of cotton-seed meal. It is a cow that I intend to make beef of before the year comes round. I have fed it to all kinds of cattle—fattening sheep, fattening cattle,

store cattle, breeding sheep, and ewes with lambs and without lambs—and the only ill effect that I ever saw from using cotton-seed meal was to early lambs; but early lambs, (those fitted for an early market,) are exceptions to all the rules of feeding. They are like hot-house plants. They are forced forward for the early market, and it is intended that the lamb, from the day of its birth to the day it goes to market, shall feed freely and be free to go and come. The ill effect I speak of manifested itself last spring, when I lost several lambs, and I laid it to the cotton-seed meal. The lambs appeared to have a secretion about their intestines, and appeared to be dropsical. I have noticed, in feeding sheep heavily upon cotton-seed, that it tended to produce a too great flow of urine; and I presume it was the same with those lambs—that it produced too great a secretion of water, and killed some of them.

Such has been my experience in feeding stock upon Indian meal and cotton-seed meal. I have fed it for the reason that it is the cheapest article of feed in the market. It is good for fattening purposes, it is good for dairy purposes, and it makes the best manure.

Mr. BIRNIE. Have you ever fed it to calves?

Mr. SMITH. I have, in small quantities, and I never saw any ill effects from it.

Dr. LORING. When I referred to cotton-seed meal, I was not speaking with reference to cows or feeding for milk alone, but I was speaking of the kinds of food most conducive to the health and long life of cattle; and I said that I considered oleaginous food as injurious to cows, and I gave as a reason, that it produced inflammation of those delicate tissues which were so remarkable in the cow, and which were so easily affected by the accident of climate or weather or food, and which rendered it imperatively necessary, in order that a cow should live a long life of usefulness, and not be cut off in her prime, as Methuselah was, that she should be fed with great care.

Now I have had experience with cotton-seed meal, and so have others. I began early. I suppose I fed it as early as any feeder in the State. Many years ago, when the Providence Company first introduced decorticated meal—which must have been as long ago as 1859, and perhaps 1858—a quantity was sent to me and I used it. I found it would produce milk and

fat. I was attracted by it, and the next year I began to feed it. I did not feed so largely as Mr. Smith does—not more than two quarts a day ; and out of fifty cows I was obliged to get rid of thirty in two years in consequence of inflammation of the udder. I found they were losing their capacity to give milk. And of the remaining cows—many of which were pure bred Ayrshire cows, which I did not desire to sell at any rate—were injured, and it took me three years to bring them back to their former condition. That was one experiment. It was manifest that the cotton-seed meal produced that effect. Year before last I purchased in Vermont, in the fall, some cows, intending to feed them in the fall and winter and turn them in the spring. They had just calved. I gave those cows five quarts of cotton-seed meal for the purpose of keeping up a great flow of milk and getting them in good condition for the butcher. Of that lot of cows I retained two, they were so remarkably good. They gave, at the time I was feeding them, just after I purchased them, from sixteen to eighteen quarts of milk a day. I kept them through the next season, turned them out to grass ; they calved again, but they never gave over six quarts of milk, and I never got them into condition again. It seemed as if they had been poisoned, or there was something the matter with their digestive organs which had been injured by the cotton-seed meal. That was another experiment.

Now Mr. Smith says cotton-seed meal is cheap in the market. What is the reason ? The English feeders are purchasing what they call oil cake at double the price of cotton-seed meal—and why ? Because their experience has shown them that cotton-seed meal is injurious. It is not a week since I met one of the most intelligent English feeders, a young farmer from Somersetshire, who is engaged in breeding Herefords, and whose father is engaged in fattening Devons, and he gave me an exceedingly interesting account of these two classes of animals. He said he was making meat for the market. I asked him, “ Do you feed cotton-seed meal ? ” “ No, I don’t. ” “ Why ? ” “ Because half a dozen animals on our two farms have died from that cause. The veterinary surgeon found that it had injured them in such a way as to be destructive of their life. It threw them off their appetite, made them dyspeptic, created accumulations of hard, fecal matter in the intestines, and the animal died. ”

Not twelve miles from this place, I know an intelligent farmer who has had the same experience with cotton-seed meal. There are always exceptions. "What is one man's meat is another man's poison." One man may feed his cows gunpowder; another can't. I am talking of the general run of the thing throughout. I have no prejudice against cotton-seed meal, but I insist that the position it holds in the market as cheaper than oil cake and other articles, grows out of the fact that so many experienced farmers have ascertained that it is dangerous to their cattle, or not good for them, at any rate. I state these facts within my own knowledge and experience partly to sustain the views I mentioned yesterday, and partly that the thing may be fairly ventilated. I have no prejudice, I repeat, against cotton-seed meal. I should be glad to have it succeed. If the manufacturers will sell it for half the price of oil cake, every farmer ought to be grateful to them for their philanthropic conduct. But the difficulty is, that it cannot be used with good results.

Mr. DAVIS. In the cases you refer to, was the hull taken off?

Dr. LORING. It was decorticated meal. Its effect is perfectly apparent, and the careful observer can see it. It is like the effect that you see upon some men who have been through some disease. It is evident to the experienced eye that their constitution is injured, although you may not be able to tell precisely what the difficulty is. But that cotton-seed meal is injurious to the digestion of our cattle I do not hesitate to say; and while some may say that they can feed it with impunity, I would not have it in my barn if I could have it for nothing. I speak of this for the general welfare of the cattle business, and it is one of those matters that ought to be carefully discussed and investigated.

Mr. SMITH. I can refer you to some of our best farmers, all through the Connecticut Valley, who have fed it to their cattle, and feed it still. I suppose the doctor and myself will have to call it a draw game. I can see no objection to the use of cotton-seed meal. It makes good butter; it makes good beef; it makes the best manure, because it contains so much oil.

I intended to say one thing more, in regard to feeding steamed food. I do not know anything about it, except what I hear, but it has never seemed to me that steaming straw could

make it nutritious. I have wondered how you got nutriment out of poor food by steaming it; but the idea came into my head yesterday that it was possible that by steaming, you got it into such a state that the animal could draw more nutriment out of it. That I gathered from some of the discussion yesterday. I have no doubt whatever that warm food and drink are better for an animal than cold; they will produce a greater flow of milk. But in order to get the best milk or the best meat, we must feed the best food. That everybody will admit. I think Mr. Horsfall does not agree with some of the statements that were made here yesterday. I was reading an account of the controversy, a few days ago, upon this very subject, and the testimony of Mr. Horsfall was, that pork that was fed upon light substances would "stink in the pot," (that is his expression,) and that beef, fed upon steamed food, had not the hardness, had not the substantial qualities that characterize beef fed upon more substantial articles of food. I have considerable doubt whether you can produce so good meat upon steamed food as you can upon dry food.

Mr. MERIAM. In reference to the views expressed by the President (Dr. Loring) yesterday, in regard to in-and-in breeding, I have no doubt that all the breeds of animals in, which great excellence has been attained—we will take the Durham, for instance, among cattle, we will take the Leicester and the Southdown among sheep—it has been due to in-and-in breeding. The arguments and prejudices against in-and-in breeding have grown out of divine and human laws, and the supposed analogy between the human race and animals. My own conviction is, that the deterioration in highly improved herds, which has been ascribed to in-and-in breeding, has originated in another cause. I believe that where highly improved herds have deteriorated, it will be found to have arisen from the fact that the cattle have been luxuriously fed and kept idle. If you wanted to find a family of children, robust, vigorous and full of life, you would not go among the rich and luxurious, those who fare sumptuously every day, and take no physical exercise, but you would go to some family in the comfortable middle class, where they enjoy the comforts of life, and where the physique is fully and perfectly developed by exercise. Now, I believe that where improved animals have deteriorated, it has arisen, not from

in-and-in breeding, but from breeding from animals whose physical and nervous systems were not fully developed. Hence I maintain that it is necessary, in order to have a good stock getter, to have an animal, a bull, for instance, that is fully exercised, so that his physique is strong, vigorous and healthy. I mentioned this subject to Mr. Griswold, who has probably the best herd of Durham animals in New England, and he told me his herd was taken care of by an Englishman, and that his bulls had two miles of exercise every day. "Bohemia," the first year after he was imported, got no stock—he was a high-fed, luxurious liver; and the next year, they made him cut his own fodder, put him into the pasture, and gave him abundant exercise, and he became a good stock getter. I have always found that a bull that is worked is a better stock getter, and gets more vigorous calves than a luxurious, idle bull. I ascribe the deterioration in many herds to luxurious, high feeding, and idle habits.

I suppose this discussion is not confined to neat cattle, and there is a subject in which Massachusetts is largely concerned, to which I will briefly allude. The statement has been made in the "New York Tribune," that the wool of the Angora goat was coarse hair, unfit for anything—hardly fit to make a decent pair of Sunday pantaloons; that the valuable shawls, cashmere shawls, for instance, were not made from this fleece; and that there was no machinery in this country for spinning and using this fleece. Now, the oldest of us recollect, that when the Merino sheep were introduced, many farmers said they would as soon have a skunk upon their farm as a Merino ram; yet the importation of that animal has added millions to our agricultural wealth. It was the introduction of a new agricultural and manufacturing staple. And it has not only done that, but it has kept so much money at home. The introduction of the Angora goat promises to furnish as valuable an agricultural and manufacturing staple. The principle of the manufacture is the same as that of lustre wool; it can be spun in the same way, and with similar machinery. To show that there is no truth in the report of the "Tribune," I have with me three samples of the first cloth, probably, ever manufactured in this country from yarn spun by machinery. The Angora wool is manufactured at Paterson, N. J., at Troy, N. Y., and at

Lowell. On the continent of Europe, they have usually used imported warps. In Vienna, they are weaving, both sides of mohair shawls at the same time, on the Jacquard loom, costing about \$35 there. A gentleman now travelling in Europe and the East, to examine into the manufacture of this article, carried over samples of our Angora wool, and he writes from Vienna, that the manufacturers there declared it equal to any they had ever seen, and it took equal rank at the Paris Exposition with the best specimens of the European wool. You will observe that there is a lustre upon these cloths. The yarn was spun to No. 32. It could have been run up to No. 50, but all these fine lustre dress goods are made from cotton warps, which are spun from combed cotton ; and in order to have them very fine, they must be spun in rooms so protected from wind that the threads shall not be affected by the air. No warp could be found finer than No. 32, and consequently the mohair was spun to No. 32. In order to make the finest fabric, the wool must be assorted ; this was spun as it came from the fleece. It was spun on the same machinery that lustre wool is spun on. I have seen photographs of the original Cashmere loom of India, and of the Jacquard loom, on which both sides of a shawl are woven at the same time, and the fabric will compare in beauty, softness and finish with the finest shawls brought from Cashmere. These were manufactured at Lowell, at the mills of the Lowell Carpet Company, and I was told by a gentleman there, who is perfectly familiar with the weaving of carpets, that there is no difficulty whatever in manufacturing this fleece.

Mr. DAVIS. The gentleman who has just sat down has brought up an inquiry, by a portion of his remarks, which I intended to make, and that is, in regard to the use and management of bulls. It is a matter of practical importance, of course, to every farmer, and I find the question is often raised now throughout the Commonwealth, whether the difficulty in getting cows with calf may not be peculiar to some particular breed. Yesterday and to-day, I have heard the remark made by several, some members of the Board and some citizens of this town, that a difficulty had been found in getting Jerseys with calf. I never have experienced that difficulty, although I have had them nine or ten years. The inquiry has also been raised, which I should like to have answered, if there is any gentleman

here who knows anything about it, whether there has been anything of that kind found to be peculiar to the Kerries. I think, from what I have heard with regard to them, and from the inquiries that have been instituted, that it will be found to be the practical difficulty under which Mr. Austin has labored with regard to the products of his importations. I have a Kerry heifer, which is now five or six years old, and I have never been able to get but one calf from her; and it seems to me that the suggestion of the gentleman in regard to breeding in-and-in, leads us to a very important inquiry as to the general use and management of bulls. It seems to be the idea of most farmers, that a bull is to be treated as a gentleman, confined to the barn, pampered, and never exercised; I suppose that is the most usual practice. In every case where I have seen a cow of the Jersey stock which has been found difficult to breed from, she has been either one of great capacity and considerable flesh, or one which has not been exercised and for that reason has too much flesh. For instance: I saw this morning, at Mr. Keyse's, three or four animals, supposed to be of the Jersey breed—bought as such, but showing in the hind quarters some marks of the Shorthorn. He says he has found that same difficulty with regard to getting calves.

I met a gentleman from Porto Rico, the other day, and he told me that he had, in connection with his plantation, a herd of bulls, and that the teams upon that island were made up of bulls, which were as docile, as easily worked, and as easily taken care of when worked as any animal that we could conceive of. They are universally used, I understand, on that island, for drawing purposes; working every day in teams of four, six and eight. Now, we certainly suffer a great loss of power in keeping bulls as we do throughout Massachusetts, and if there is any well-settled rule with regard to the best mode of taking care of these animals, which are, except in one respect, the most unproductive consumers upon the farm, it seems to me that all of us would like to know it. And if there is any incapacity peculiar to any one of the imported breeds, it seems to me that the inquiry to what it is owing, would be a very important one in this connection.

Professor AGASSIZ. I should like to ask one question. Whether, in connection with the various modes of feeding cattle,

measurements have been made to ascertain the quantity and quality of the milk, so that the relation between the quantity and quality of the milk and the different modes of feeding and different articles of food should be ascertained.

Mr. BERNIE. I doubt very much whether there have been any accurate observations made.

Professor AGASSIZ. I think the instruments by which all these observations may be made with the most perfect accuracy are so easily obtained, that our studies on these subjects should be accompanied by actual measurements, so that the results may no longer be matters of mere general and vague impression. I think a great service would be rendered to agriculture if the lactometer were used to ascertain what is the quality of the milk. There have been some very beautiful experiments made of that nature, and from the reports, (I have not seen them made,) I judge they were neither difficult nor costly; and therefore I think those who are interested in determining the best modes of feeding should do something to ascertain what they get by their different modes of feeding.

N. S. HUBBARD, of Brimfield. I recollect one thing that came up in connection with one of our cheese factories. On trying the milk we found there was some difference in the quality, and there was one particular dairy the milk from which they supposed to be adulterated. It was tried from day to day and week to week, until they were satisfied that water was added to the milk, and means were taken to ascertain with regard to it definitely, so that one man should not bring adulterated milk to go in with milk that was pure. On getting at the exact facts, they came to the conclusion that the milk was not adulterated, but that owing to the quality of food this dairy had produced a poor quality of milk. I had been engaged in the business of sending milk to market for some fifteen years, before the establishment of cheese factories. We fed tons and tons of shorts to our cows during the winter season, so as to get the largest flow of milk; but we found that by feeding shorts we were running the cows too hard, and that we needed something to support the cow as well as to get a great flow of milk; and we found, on feeding corn meal, that the cow very soon improved, and the quality of the milk improved. I know the men who bought milk in Boston had a preference for particular dairies; and it was owing, in great

measure, to the mode of feeding practised in those dairies. Take it in the summer season, cows fed in pastures that produce clover luxuriously will always produce a better quality of milk than cows sent to pastures where there is nothing but June grass. And it is just so with feed, at whatever season of the year. If cows are fed a good while on corn meal they will not give so large a flow of milk as when fed on lighter foods. Lighter food produces a larger flow of milk, but it wears down the cow more than it does to feed a better quality of food. I think there is the great difference. Of course the milk that the cow gives is manufactured out of what she eats; and if she eats a better quality of food, the milk must be of a better quality.

Now, with reference to what Mr. Smith said with regard to feeding various things, cabbages in particular. For some eight or ten years I have fed cabbages to my cows in the fall of the year regularly, in moderate quantities, and I have never discovered anything, either in the milk or in the butter, (though we have made butter but a small part of the year because we have been engaged in selling milk and making cheese,) which indicated the presence of cabbages. If the milk or butter does taste of the cabbage, it must be either because it is fed to them in too large quantities, or fed to them when they have been in the habit of having other food in large quantities. Fed to them regularly, at the proper time, in moderate quantities, it will increase the flow of milk; and I have never discovered anything objectionable in smell or taste.

Mr. BIRNIE. A few years ago I sowed a tobacco bed, and at the same time sowed a cabbage bed. I had very few tobacco plants that were good, but an excellent bed of cabbage plants; the rains came on, and it seemed to be a very favorable time to set out cabbages, and I set them out every rainy day. The result was, my piece was covered with cabbages and no tobacco. I had some five or six acres of cabbages, and they grew tremendously, and gave me the greatest crop of cabbages produced in our neighborhood. They ripened and began to burst before I knew it, and I commenced giving them to my cows, feeling, at the same time, that there was some danger of their tasting in the milk. I had that impression because I had some experience when feeding the outside leaves occasionally to my cows; the milk tasted of the cabbage. But I began to feed them by the

wagon-load. I would carry as much as two horses could draw to twenty cows ; and I found no ill effects, and heard no complaint. My wife considers herself rather particular about milk ; I did not say anything about it, nor did she ; and none of the customers made any complaint. I fed a great many tons that autumn—as much as two tons a day right along—to my cows, and they grew fat and gave great quantities of milk. Since then, I have raised cabbages every year for the express purpose of giving them to the cows. They seem to begin to gain flesh the moment they began to eat the cabbages.

I have fed turnips without discovering any ill effect ; but when my cows have fed on turnip-tops as they pleased, then I have tasted the turnips in the milk. But where turnips have been fed moderately, in the morning, after milking, I have never heard any complaint whatever.

I was very glad to hear the discussion in regard to cotton-seed meal. I was questioning whether I should buy some for the purpose of feeding my calves. I raise a great many calves every year, and have been in the habit of feeding them oil meal—at first putting a little of the oil meal into the milk, and after awhile withdrawing the milk, and feeding them entirely on oil meal. Calves grow and thrive exceedingly well on oil meal. I have noticed that there is a difference of about \$10 a ton between oil meal and cotton-seed meal.

Now, in relation to steamed food affecting the quality of the milk. I have never heard of such an objection to milk produced by feeding steamed food ; and I do not believe there is any such objection. For ten or eleven years, I have fed my cattle with steamed food, giving them very little dry hay, and I believe the milk is better, and the cattle are certainly better. They look better ; they do not consume so much, and what they do eat is more thoroughly digested ; less passes through them undigested. I have often seen statements against it by scientific men. My experience satisfies me that there is a great economy in it, and I am very happy to learn from Prof. Agassiz, that it is not antagonistic to science. I shall continue to practise that method of feeding until I see that it is injurious.

Mr. MERIAM. There seems to be a difference of opinion here, among practical gentlemen, with regard to the effect of feeding cabbage and turnips to cattle, some declaring cabbage

to be very excellent, strong, wholesome food, and not injurious to the milk, and others holding the contrary opinion. In my neighborhood, the cabbage yields from forty-four to fifty tons of green feed to the acre, and we keep it all winter. A furrow is ploughed by the side of a wall or fence, the cabbages are set in it and covered up, and furnish an abundant supply of green feed for the winter. Cabbage will yield about fifty tons to the acre; that gives a large quantity of feed, and if it can be used with safety to the butter and milk, it is certainly very desirable to know it.

I have some very early English turnips which I began to feed six or eight weeks ago, and it destroyed a churning of butter, and the milk was injured. Mr. Birnie has stated a fact that reconciles this difference of opinion. He states that he feeds cabbages and turnips in the morning, after milking. I changed my time of feeding from before milking to after milking, and I was surprised at the result. The night's milk was not injured, and we were never troubled after we began feeding after milking. I do not find any injury from feeding either cabbage or turnip in that way, and I find them very valuable feed.

Mr. BROWN. The suggestions of Prof. Agassiz in relation to the necessity of inquiries to determine the quality of milk, are very important to us; and if the Board of Agriculture will come to some conclusion in regard to the matter, and publish it, so as to set our people to making experiments and investigating the matter, they would do the country a very great service. I have no doubt whatever that the quality of the food affects the quality of the milk; but I have some doubts whether, by the test of the lactometer we can discover the variations. It seems to me it will require some nicer instrument. Now, if I want milk that will give me a large quantity of butter, I send my cows away upon the hills, where the grass is short and very sweet; and if the hills are stony so much the better. Cows feeding on such grass will give milk that will make, I think, double the quantity of butter that the same amount of milk will make when the cows get into clover fields. But if I desire to make milk for our Boston friends to use, I send the cows into the most luxurious clover fields I can find, and then they will give me brimming pails. I have some facts, which I will not stop to relate, upon that point, where exact experiments have been made from day

to day, and the variation in the quality of the milk has been shown to be just as certain as the variation in going from one pasture to another. There can be no doubt that the quality of the food does affect the quality of the milk—in its richness, I mean—and that is a point to which our attention should be turned more than it has ever been. We need some well-settled facts in relation to it, which it seems to me the Board of Agriculture can give us better than we can get them from individuals, because we have the aggregate experience of a large number of people; and that is what we want.

Dr. LORING. I want to say one word in regard to roots. Mr. Hubbard alluded to the use of shorts as being injurious to cows, stating that it “run them too hard.” I want to call the attention of the Board to the fact, that I distinctly stated, in describing my mode of feeding, that I made considerable use of roots. I can never say too much about the root crop. It seems to me every farmer who is feeding cattle for any purpose should remember that root crops really lie at the foundation of the most economical and profitable feeding. It is a most astonishing thing to me that men should have been laboring twenty years to induce farmers to go into the raising of roots. We have got machinery for planting the seed and cutting up the roots—everything is prepared, and I do not see why it is so difficult to induce farmers to engage in the cultivation of roots. The cultivation of mangolds and swedes lies at the foundation of the most successful farming. That is saying a great deal, but it really does come to that in the end; and why the sheep breeders of Vermont are so slow in introducing the cultivation of swedes, and the cattle breeders of Massachusetts so slow in the cultivation of mangolds, I cannot imagine. The swedes are raised more easily and cheaply than any crop, and the mangolds, considering the small amount of labor and manure required, are really the most profitable crop you can raise for your cattle except swedes.

Mr. FLINT. I should like to say one word more in addition to what I said last night in regard to the use of cotton-seed meal. We all know it does not do to draw general conclusions from the result of one experiment, or two or three; and previous to the statements made by Dr. Loring, I think I had never heard of half a dozen individuals, who had used cotton-seed meal extensively, who had found any objection to it; while, on

the other hand, I have known certainly hundreds of cases where it has been fed with perfect satisfaction and with the best results. I think there must have been some special causes, in those cases where the result has been unsatisfactory, which were not, perhaps, apparent. I alluded, when speaking of the subject yesterday, to the reputation of cotton-seed meal in England, where Dr. Voelcker has investigated the nutritive qualities of cotton-seed meal as compared with linseed meal; and I know it has been used there with great success. In a few cases objection was made, and those cases were investigated by Dr. Voelcker and other thoroughly competent scientific men, and it was ascertained, upon getting at the facts, that the objectionable effects resulted from feeding undecorticated cotton-seed. It was found that the hulls collected in a large lump in the stomach, and of course threw the stomach out of order. In every instance that has come to my knowledge where any objection has been made, the injury has resulted from feeding cotton-seed meal which has not been decorticated, or from feeding it in too large quantities, or what might be termed injudicious feeding.

I merely rose to state that I think we should not draw general conclusions from one, two or three cases; that the subject is worthy of more careful experiment and investigation; and that, before we condemn cotton-seed meal, we should wait until we have a larger number of experiments; for so far as I have heard of its use, in hundreds of instances, at least, the result has been satisfactory.

I think we have upon the Board one of the largest feeders in the State, and I would like to hear what his experience has been. It has been suggested that we cannot feed beef cattle in Massachusetts. I understand he has eighteen head of beef cattle feeding now.

H. S. PORTER, of Hatfield. In regard to cotton-seed meal, I have been using it for the last ten years with very great success, not only for dairy purposes, but more especially for fattening purposes. I have used it in small quantities—three quarts a day, mixed with Indian meal and shorts, and I have found it very beneficial; so much so, that I continue to use it, and I have never perceived any bad effects from it. I once thought I lost a very nice calf, that I proposed to push pretty hard, by over-feeding with cotton-seed meal; but for fattening purposes,

I have never seen anything equal to it. I find that those cattle that have been fed with cotton-seed and Indian meal always weigh the best, and so far as my experience goes, feeding with cotton-seed meal has been a great success. I have also used it for fattening sheep. I usually have about one hundred and fifty sheep in the winter, and I feed them a mixture of a quarter or third cotton-seed meal and the rest shelled corn. My neighbors have used it as much as I have, perhaps more, and in no case have I found any objection to it, except where, as Mr. Flint says, unhulled cotton-seed was used. Some thought they hurt their animals by using that, and they stopped at once. But where the genuine hulled seed has been used, I have seen no ill effects from it. I have used from ten to fifteen tons a year, and my neighbors have used it in larger quantities. One of my neighbors has bought twenty tons for use this winter.

Although I have never had any trouble where the cattle were fed with this meal, I have a neighbor who fed cotton-seed meal very extensively to two cows. They were very nice cows, and he kept them in a high state of flesh, feeding them as much as eight or ten quarts of cotton-seed a day. The consequence was, he had a great flow of milk and made a large amount of butter. He claimed that he made eighteen pounds of butter a week from each cow. The consequence was, that in two years, he had to turn them into beef. It dried them up. They were cows that took the first premium at our show, and one of them went as high as nineteen and one-half pounds of butter a week. He thought he was doing a very nice thing that winter, but the next year, he turned one of them. I asked him, with some surprise, "Why do you turn that cow into beef?" He rather hesitated, hung down his head, and said, "I can't do as well this winter as last." "Why?" "I guess I forced them a little too hard." If he had fed his cows a reasonable quantity of cotton-seed meal, say three quarts a day, with shorts or Indian meal, I think his cows would have been good now.

Mr. SMITH. I will ask the gentleman a question: If he cannot crowd an animal harder by feeding a mixture? That has been my experience. I have not experienced so much danger of over-feeding or cloying an animal when I have a portion of cotton-seed meal. In regard to the two cows he has mentioned,

I have no doubt the same effect would have been seen if they had been fed so high with anything else. I well recollect a very nice heifer that I was satisfied I spoiled by feeding her shorts. I am somewhat persistent in this, because I am strongly in favor of cotton-seed meal from the experience I have had. As I said before, I have used it for several years, and I have seen no unsatisfactory results.

FRUIT CULTURE.

The subject of Fruit Culture was then taken up, and the discussion opened by the Chairman, Captain MOORE, who said :

Fruit culture, the subject assigned for discussion to-day, I need not say to this Board, is one of the leading interests of farmers and gardeners in Massachusetts.

According to the returns of Industry of Massachusetts for 1865, the value of fruit returned amounts to \$1,713,240. This does not include the small fruits, but is confined principally to apples and pears, and was compiled from the returns made in a year of a failure of the apple crop to a large extent, and is probably underestimated. To this might safely be added a sum sufficient to swell the whole amount to \$2,000,000 for small fruits ; this would be the estimated product of fruit for the State.

The amount consumed is very much more than produced, particularly of apples, peaches, grapes and strawberries, most of which are brought from distant places to supply our markets ; and this fact shows that there is still room to extend the cultivation of almost all varieties of fruit now grown here, with a reasonable prospect of remuneration to the producer.

With land well adapted to the production of the apple, is there any good reason why we should not only produce sufficient for home consumption, but for export also ? I know that some persons say that the apple is failing ; that they do not produce as much as formerly.

That there has been a partial failure of the crops for three or four years is true, but is there any crop grown by the farmers of this State, weeds excepted (which never fail if you give them a chance,) which has not at times been a partial failure ? Have we discarded potatoes because they rotted extensively, or

given up growing English hay when the crop has been almost worthless from drought, or given up the growing of the different grains because they have suffered from blight, rust, or insects? Not by any means, but we have endeavored to find a remedy for the trouble.

And now, while I do not think that it would be advisable to plant apple orchards on good tillage lands worth one or two hundred dollars an acre for other purposes, I am well satisfied that there is a large amount of land, well adapted to the apple, that is not so accessible, free from stones, so well adapted to other farm crops or so valuable, that might well be planted with apple trees and made profitable to their owners. I will not undertake to give any reason for the small crops of the last four years, but can only say that there are a few instances within my own knowledge, where, having high cultivation, very fair crops and quite profitable ones have been grown the last three years.

Then would it not be safe advice to give, in view of the fact that we consume more than we produce, and that the old orchards, having fulfilled their mission, are fast going to decay, to plant such cheap lands as I have described, with the apple, not only for home consumption but for the market? I certainly think that it is.

The pear, which it was considered of doubtful expediency to plant largely for profit, has become one of the standard fruit-crops, second only to the apple in value for general cultivation. This is largely due to the introduction of better, more productive and desirable varieties, for which we are indebted to the liberality and public spirit of a few eminent horticulturists, more particularly to a former member of the Board of Agriculture, Hon. Marshall P. Wilder, and to the influence of the Massachusetts Horticultural Society. These have done a great deal for the public benefit by importing and disseminating new varieties, and by showing the fruit, thus enabling those desiring to plant to make a proper selection of varieties, which, with a good soil and high cultivation, are three of the most important requisites in pear culture.

I will not name any methods of cultivation, as there are others here who will take part in the discussion who are much better qualified to describe the best methods than myself.

As to grapes, they have suffered the present year from the extreme wetness of the season ; and although in amount a fair crop, they were not well and evenly ripened, and they have suffered very much more than usual from mildew. On some varieties both fruit and foliage, on others the foliage alone was affected. The fruit also has been injured to some extent by rot.

Mildew, contrary to all former experiences, and to the theories of writers upon the subject, who usually assign it to low, damp, close and humid places, has developed itself much more extensively on the most high and airy parts of the vineyards.

The west sides of the vineyards in the vicinity of Concord have suffered more than the east. This is the greatest pest of grape-growing, and neither sulphur, nor any other application that I am aware of, has been able entirely to prevent its ravages the present season.

I will not undertake to advance any theories of my own about mildew, and although I have watched it carefully through all its phases, I am honest enough to say that I know but little about the precise causes for its appearance, or the best remedies to apply.

However, this year is an exception in this respect, and may not be repeated for some seasons to come. The safe course will be to cultivate principally such varieties as are comparatively free from mildew.

The following varieties have suffered from mildew in the order named, commencing with those affected the most :

1st "Crevelling," (lost all the foliage, the new wood mostly dead ;) 2d, "Delaware ;" 3d, "Diana ;" (nearly as bad as the first-named ;) 4th, "Iona ;" 5th, "Israella ;" (both these lost a large part of their foliage, the wood of both, however, is apparently alive ;) 6th, "Rogers," No. 15 and 3, (both badly affected, not only on the foliage, but to some extent on the fruit ;) 7th, "Allen's Hybrid" (about one-half of the foliage destroyed ;) 8th, "Hartford Prolific" (a large portion of the foliage injured, none on the fruit ;) 9th, "Concord" (one-half of the foliage of the high part of the vineyard was destroyed, on the low parts, but very little ;) 10th, The "Martha," the "Black Hawk," the "Clinton," (hardly any.)

Most all kinds have been injured by the rot to some extent, but still with all these drawbacks it will take more than one unfavorable season to change my opinion about the entire practicability of grape-growing here.

But, gentlemen, the subject of small fruits is the one that we should more particularly urge upon the cultivators of our State. Not that the former are not important, but that they have already a good start, and are more prominent before the people.

I hold that every person who cultivates a garden, should raise the small fruits to some extent for family use, and coming as they do in the hot season, at the time when such food adds, particularly by its cooling nature, to the healthy action of the stomach, they promote health and are also agreeable to the palate, and save money by keeping away the doctor.

The strawberry is one of the varieties of small fruits, of which every one who has a garden should have a bed sufficiently large to supply an abundance for the family, and when near the market is a profitable crop to raise to sell. The same may be said of the raspberry. Both require good soil and high cultivation to succeed perfectly, and when grown for market, no larger extent of surface should be planted than can be easily handled, both in the cultivation, picking and marketing.

Mr. J. F. C. HYDE, President of the Massachusetts Horticultural Society. The remarks of the chairman suggest to us many things in regard to fruit culture. He has glanced over the whole field, and has touched upon one subject in which I feel a great deal of interest; that is, the failure of the apple. We all remember when apples were as abundant as any crop produced on our farms. Then apples sold for \$1 or \$1.25 a barrel, and cider was produced for \$2 and perhaps less a barrel; while now we are paying \$6 a barrel for Northern Spys, and cider is bringing \$12 or \$14 a barrel. The question naturally arises, "Why this state of things?" A writer in the "New York Tribune" says that New England can no longer produce apples; her soil is worn out, and therefore we must look to the West and the Middle States for our supplies of that fruit. This seems to me to be nonsense. If our lands have been exhausted of those elements which are necessary to the growth of the apple tree and the production of its fruit, is it not possible

to supply that which has been taken from the soil? Is it possible that at this late day there is no man among us, (and we have the most scientific man in the world in this meeting,) who can tell us what to apply to those soils, and that we must remain open to that charge, that our soils are worn out and can no longer produce fruit? I will not admit it for a moment.

My theory about the cause of the failure of the apple crop is this. It is well known that we had, three or four years ago, two years in succession, the greatest droughts that were ever known in this part of the country. So extreme were these droughts, that hundreds of thousands of forest trees, where the soil was not deep, were actually killed. I say my theory is, that during these years the apple trees suffered to such an extent that they have since then been incapable of producing fruit. They made very little wood in most cases, and had all they could do to sustain themselves and keep alive without making fruit. In proof of this, I give two or three facts that have come under my observation. One is, that a year ago last spring we had a considerable number of blossoms, and although the season was wet, the blossoms dropped off in many instances, and in others the fruit dropped after it had got to be some considerable size. How do you explain this, you ask? My theory is, that the tree had not become sufficiently strong to carry the fruit; that it wanted more time to recuperate. In proof of this position I give this fact. Three years ago I visited quite a large orchard in Newton, where I live, in a sheltered position, and I found several Nonsuch trees full of fruit. I said to the owner of the orchard, whom I know very well, "How is this?" Said he, "Those trees were watered regularly." "Is it possible that you watered those trees, large as they are?" "Yes, I carted the water and watered those trees, so that they did not suffer from the drought last year." In the second year of the drought, when the apple was an entire failure in our section, his trees were full of fruit. There was no other reason for the difference. If you say it was protection, I say there were other trees, protected in just the same way, with scarcely an apple. I give that for what it is worth. I know it to be so. I think the trees were unable, having suffered in that way, to bear fruit; but they went on recuperating their energies to get into good condition. Last year was not a bearing year, and therefore, if the season had

been favorable, we could not have expected a large crop, and it is true that there was not a large crop.

It may be asked, "If the apple tree has suffered to that extent, why has not the pear? How are you going to account for the fact that the pear tree has given us good crops?" But it is not true that the pear tree has given us, during the last three or four years, such large crops as in favorable seasons. Another reply that I would make is, that the pear tree does not require the moisture that the apple tree does. It does not spread itself like the apple tree; it does not make the same amount of wood or foliage. And then, again, the pear, in nine cases out of ten, perhaps forty-nine out of fifty, has better treatment than the apple. In many cases it is mulched or otherwise protected; in many cases watered, and when watered, good results have followed. Again, many pear trees about Cambridge, Roxbury and other places are planted on low, moist soil, where their roots penetrate where there is moisture. I believe it is true of the apple tree that it requires a damper soil than the pear and takes up more moisture because of the larger amount of foliage and wood.

It seems to me that we have thousands of acres lying remote from cities, and yet close enough to railroads to secure cheap transportation, where apples can be grown profitably, if we can have such crops as formerly, for \$1.50 a barrel. Why, then, should we go to New York or Michigan and pay \$5 a barrel, and then not have them in so good condition as we should get them here? I agree, it would not be good policy to plant apple trees, where land is worth \$5 an acre for smaller fruits. In fact, I have taken up splendid Baldwin apple trees from my land, and put them on land that was less valuable. It seemed too bad, but my land is more valuable for grapes and other small fruits. But still, there are thousands of acres that can be profitably devoted to apple culture. I do not feel discouraged about it, any more than I do about my grapes, because my grape crop was a perfect failure. I predict that we shall have next year, a fine crop of apples. The two past wet seasons have put them in condition. I have never seen them in better condition than they are at the present time. I think no one of us who writes at all for the papers should let down a particle in regard to the apple crop. I want to know what people

remote from the seaboard could engage in more profitably than apples? Pears do not do so well, but apples do even better there than here. There are formidable enemies to the apple, about cities, especially the canker-worm. This pest remains for a time, and then disappears. I know that the caterpillar has got to be a formidable enemy in some places, but a little vigilance (yes, a good deal is required sometimes,) will relieve us of that. I can show you whole orchards of a thousand trees, where not a nest can be found; but they belong to industrious men, who are up in the morning looking after their trees. I believe these things can be remedied.

We need more light on the failure of the apple. If there are reasons which have operated, and will continue to operate, against the raising of apples, it is important we should know them; and if there is no reason why this failure is to continue, then it is important we should know that, for it is a fact, that there are fewer apple trees planted in Massachusetts now than ever before, and the result will be, if we go on discouraging, as some have during the past few years, the growing of apples in different parts of the State, we shall be obliged to send our money out of the State for this fruit, which it seems to me we ought not to do.

Mr. BROWN. How is it with regard to pears?

Mr. HYDE. This year has been one of the worst years for pears that I remember. Certainly, I never have experienced a worse one since my orchard has been in bearing. I have a small orchard of 400 standards and 600 dwarfs, and the pears were so poor in flavor as not to be worth anything; and the same was true of thousands of other orchards, in different parts of the country. In Southern Illinois, they had the same trouble. I think it must have been owing to the wet season. I have never known pears to crack as they did this year. Clapp's Favorite, a variety only about twelve or fourteen years old, cracked in my place badly. You will see that age cannot be the reason; there must be something besides that. Take the Belle Winsor. That does not usually crack, but it cracked this year badly. I never knew it to before. The Buerre Diel cracked all to pieces, so that you could actually see the seeds. Why was it? I cannot tell. I think it was owing to the peculiarity of the season. I cannot give the philosophy of it, I

cannot tell how it was, but I know that many trees lost their leaves before August. The Flemish Beauty was good for nothing with me this year, and I fed them to the pigs; and I think they were foolish pigs to eat them, they were so poor. Although my land is rather dry soil, and sufficiently drained, as I think, yet these were the effects that I observed. Even the Bartlett cracked—a variety that I never saw crack before. I cannot account for it in any other way except from the extreme wetness of the season. The season has been one of the most remarkable, take it all together, that I ever remember. It has been cold and wet, and very unfavorable for the full development of fruits. There have been but few varieties that have retained their flavor. There is one variety that I remember particularly, and take pleasure in mentioning, because it is one of the best varieties on the list. The Seckel, the best pear in flavor, cracked, but Dana's Hovey did not crack, and retained its flavor. That is a remarkably fine pear.

Mr. BROWN. I want to make one remark. I will not discuss the matter at all. The gentleman who has just taken his seat says that the season has been a peculiar one. I think we have all experienced that, and are satisfied of the fact. But what is the peculiarity of the season? Who knows anything about it? We expect a dry, hot summer in order to get a good crop of Indian corn; but we had, the past summer, one of the best crops of Indian corn, through this region, that we have had for many years. This year our fruit has been exceedingly poor. I have not eaten half a dozen pears of really good flavor; they have been insipid, and some of them almost tasteless. The remarks that the gentleman has made with regard to the worthlessness of fruit this year are entirely correct, and I think they are applicable to fruit in all this region. Now, in what does this peculiarity of the season consist? I wish some of the wise ones would tell us that, so that we may know how to shape our course another summer, when the season is the same. We have got the corn in perfection, and yet we have not got the fruit.

A MEMBER. I would inquire if the tendency to crack in pears has been increasing during the dry seasons?

Mr. HYDE. There are certain varieties that always crack more or less; but this year has damaged some theories that have been entertained by fruit-growers. The Beurre Diel, one

of the best pears, if we can grow it smoothly, has cracked badly this year. The theory has been, that in a dry season, the rains coming on, the moisture has been furnished so suddenly that the skin could not expand quickly enough, and consequently it was broken. Now we have had rain enough this season, and yet they never cracked so badly as this year. The St. Michael, the Stevens Genesee, the Flemish Beauty and the Beurre Diel are varieties that have always cracked with me, more or less; they are subject to that defect; but I cannot say that I have noticed that the Seckel, the Bartlett, the Clapp's Favorite, the Lawrence or the Vicar have shown any tendency to crack until this year in my ground; so that it must have been owing to the peculiar season.

Mr. BULL. One thought suggests itself to me in regard to the exemption of Dana's Hovey. That is a new variety, and for the first three or four crops a tree is less liable to disease than at other times. After it has got well established, if the beginning of the season should be dry, there will be a tendency to crack. I think the cause of this defect is that the grown tree, with abundant fruit, losing part of its roots in a dry season, becomes incapable of supplying the abundant foliage with sap as fast as it consumes it, and at the same time keep up a healthy growth of the fruit. It has got to adapt itself to the new conditions. It must make new roots; then it has got to make its wood and fruit-buds; and so you will find, after the tree has been barren for a couple of years, that it begins to bear again. Now, when a pear tree is young, has just got established, the balance between root and top is in good proportion, and it is exempt from this tendency to crack and from other diseases; but when it has got large and well established, these things come in to affect it. Some of these new varieties, at first exempt, come at last to crack. I suppose that may be the explanation of it.

With regard to corn, we had, during the whole of the fore part of the season, wet weather. The corn started well, and did not suffer from drought. It continued to grow, and the latter part of the season was warm and dry, and ripened the crop well. The late pears were the best. All I got that were fit to eat were those that ripened late, and were not too forward when the warm weather came.

Our chairman has very truly said that this has been a most unfavorable year for the grape. Mildew has affected varieties in localities where they have never before been affected; (I think all varieties have been occasionally affected, in certain localities, though generally exempt.) But this year, none were exempt. The season was peculiarly unfavorable. It has been truly said, that some of the circumstances attending the presence of mildew go to upset many of the theories of the text-books in regard to it. Suppose we look at that subject of mildew for a moment. I confess, I have never been able to satisfy myself that there was any peculiar cause for it. I believe there are various causes operating, some at one time and some at another. I am most inclined to accept Dr. Fisher's theory, that it is due to hygrometric changes. He tells me, that up to the 9th of July—and you will remember the season was, up to that time, cool and wet—his grapes had no mildew upon them. At that time, we had two or three bright and hot days, which they improved to make their hay, and immediately the mildew appeared. It took the upper leaves on his trellises, and was instantly apparent. Immediately after these two or three days, the cool, moist weather returned, and the mildew stopped. That is a very remarkable fact, for according to the generally received opinion, a wet season makes mildew; and we have always believed that the spores of this fungus in the air, in continuing wet weather, found favorable circumstances to grow, and establish themselves. My experience was the same; I had no mildew until that time, and then I found it, as the doctor did, upon the upper leaves. That is one theory. Prof. Silliman, I think, wrote an article upon mildew, which appeared in the "Horticulturist," in which he expressed his belief that it was a constitutional defect, inherent in the vine. I do not think that can be exactly true. I think I can say, that if there is any constitutional defect, if there is a weakness in the vine, it would be peculiarly predisposed to that disease, and so it might ensue under circumstances of such slight provocation as would not affect healthy vines, without that constitutional defect. I think that view of the case is strengthened by the fact, that our weak-growing vines are generally most subject to mildew. I find it to be the case with some of these slow-growing, tender vines, that they lose their leaves in the summer

without mildew, perhaps from want of natural force. It does not seem to be sunburn. We are, after a time, possibly, to get rid, through our united experience, of the notions which we have accepted as facts heretofore, and to establish the true rule of the case, according to our experience. Sunburn rarely occurs, but sometimes it does. If the foliage is very thin and tender, an intensely hot sun after a shower will affect the leaves.

I think we have a habit of calling all diseases whereby plants finally lose their leaves, mildew; but I have an idea, (and I think it must be true,) that there are various reasons why the leaves fall, and that it is as improper to say "mildew" for all these troubles, as it is, in my judgment, to say "rot" for the loss of the berry. There is a form of disease which is rot. There is a kind of blight which falls upon the tender grape when first established, upon a certain change of temperature, and prevents it from growing, and finally it falls. The whole vine is very rarely affected in that way, but usually one or two-thirds will be. Dr. Schroeder says the remedy for the rot is continual reproduction, by what he calls the double reverse system, which is only the old system of renewing from the old root, by putting down layers, so that new roots may take the place of the old. Prof. Kirtland, I think, says he is convinced that the Catawba rots because of close pruning and over-cropping. That suggests a solution; because, if you prune close and crop heavily, while you have a well-established vine and large roots, you must disturb the functions of the plant. And it is an indisputable fact that young vines escape the rot better than old ones. I believe there is no instance where a vineyard, in its first or second year of bearing, has shown the rot in its fruit.

Let us look at that a moment. I have said to you, gentlemen, before, that we prune too much. If you have large root-power a great quantity of crude, unripened sap is taken up. It is the raw material to make sap of. It goes to the foliage and is there elaborated and changed into true sap, so as to be made into fruit, wood and root in the proper and healthy way. Suppose you have a vine and confine it to a stake, say six feet high, year after year, or to a trellis which is six feet high, with lateral arms six feet long, (which is generally the space allowed,) and you have root-power sufficient to carry it forty feet in every direction,

it is clear that if you do not give it extension you cannot have the *foliage* to elaborate that crude sap into true sap. What happens? Why, this crude, unripened sap surcharges the grape, (and it is precisely for the purpose of getting large grapes that this pinching is practised.) When this crude sap has once got to the grape, the circulation of the sap in the vine and all its natural processes are impeded for want of foliage, and the berry is engorged with unripe sap. There is only one alternative. If nature cannot evaporate the unripe sap from the surface of the grape, if the sun cannot ripen it, it is surcharged with unripe juice, which, when the finer functions of the grape come into play, changes the tissue, rots it, and the grape perishes and falls.

Let me illustrate in the light of experience—not my own simply, but that of others. In the spring of 1861 I planted a vine against the west end of my cottage, which I wanted to cover up rapidly. I did not prune it because I wanted the shade. That vine measured, at the end of last August, eight inches and a quarter in circumference six inches from the ground. It covered a trellis 25 by 15 feet. The ends had to be pinched to keep them from extending too far. That vine has given me, for two or three years, two bushels of ripe grapes—about 120 pounds—a very large crop. During these few brief years it has grown to that size, and I have had these crops. It did not, this year, have any defect of berry, not even mildew, which perhaps was due to the vicinity of the house. I do not think that would save you wholly from *mildew*, but it would save the grapes from rotting. Other vines were affected to some extent, but without exception, my largest and finest vines, bearing one hundred pounds or more, escaped.

Mr. Breck, the worthy ex-president of our Massachusetts Horticultural Society, and a grape-grower of many years' experience, has a Concord vine which he planted near an apple tree for the purpose of allowing it to have its own way and extend as far as it pleased. It has now covered the tree; it escaped mildew, even this year, and all disease, and gave him one hundred and seventy-five pounds of grapes, which ripened perfectly.

There is another illustration given by Dr. Schroeder. His vineyard of Catawbas, after bearing sound and healthy fruit for two or three years, was affected by the rot. He layered from

the old vines into the intervening spaces and rooted them, and when they got strong enough to bear, the second year, he separated the new plant from the old root upon which it had been feeding, took up the roots of the old vines, and got two or three successive crops, entirely free from rot again. So he has, by his system of renewal by alternate layering into the intervening spaces, kept his vines young. Now, if you *will* dwarf your vine, I think you will find yourselves under the necessity of replacing it with a young plant if you want entire success.

This subject is worthy of consideration. I dare say others have had the same experience that I have had in the matter; that young vines of those kinds which are liable to mildew and to rot will bear for two or three years, and then, as they get older, will fall into these defects. Therefore, it has come to be a saying among grape-growers all over the country, "True, this new grape is exempt now, but let us wait and see. All others have broken down, and this may." I think all our strong-growing grapes would break down unless renewed or allowed to have sufficient extension.

Denman speaks of a vineyard in Italy one hundred years old, with 100 vines only to the acre, yielding a product of 431 gallons of wine—or four gallons and three-tenths to each vine. It was always in perfect health, or it would not be a hundred years old. The crop comes up fully to the average of all Italy.

If you go into the Burgundy district, in France, where they grow the famous Pineau, which makes the finest wine in all Europe, you will find (as I learn from the same work,) that the vines are planted only twenty inches apart, and they find themselves under the necessity of renewing every year with new vines, one-tenth of an acre, so that their vineyard is never but ten years old. When you consider the well known fact, that the vine in France does not bear fruit until it has been planted five years, you see they get crops only five years before renewing. They find themselves under this necessity, because they dwarf, and they dwarf because it brings the fruit nearer the ground, and it is supposed to ripen better. They know, of course, from their long experience, that it does ripen better, and makes better wine. Not that the grape will not grow to a large size. Chaptal mentions a vine that he says was six feet in circumference. That was probably the Muscat of Alexandria,

which was one of the most ancient vines in Europe. It split open and died in the severe winter of 1792. Now, the Muscat is grown in the vineyard in the same way as the Pineau—it is somewhat larger, bearing a full crop. Their experience illustrates what I have said, that there must be a proper balance between the root and the top; that there must be sufficient extension to obtain foliage to elaborate all the sap which the root takes up. If the root is large, the top must have extension in proportion. While it is young, the vine makes its own balance, and for two or three years, you may do pretty nearly what you please with it; but when it has got strong and well established, it justifies what Chaptal has said of it, that it is intractable, and obstinate in its habits; and justifies the remark of our friend on the lake shore, William Griffiths, “When I go into my vineyard, to prune, after twenty years’ experience, I feel like taking off my hat, and saying, ‘If you please!’”

J. F. C. HYDE. It seems to be still an open question whether any money can be made by the production of grapes. Every one should grow them for his own use, because everybody can do it, but I do not feel satisfied that it would be profitable for our people to engage in it as a branch of business. I look forward to the time when we shall have a variety of the grape that we can grow; but I feel pretty certain that we have not got what we want yet. It may be said, “Why, you can make money at twenty cents a pound.” I agree to that. Assuming three tons to the acre, make your own figures, and you see it is profitable. But I can remember selling good Isabella grapes, many years ago, for six cents a pound. Can we grow grapes at six cents a pound, at a profit? A gentleman from Rochester, said he would agree to deliver them for three cents a pound, and make it profitable. I undertake to say he cannot do it—nobody can do it. I think five cents a pound is the lowest, and wine-makers will give that for them. When this fruit gets down to six cents, we can make no money by raising it round Boston. We can put our land to a better use. Still, it can be grown in other parts of the State. There are some vineyards in the State, in choice locations. It seems to me the greatest care and judgment should be exercised in planting grapes. The most famous vineyards of Europe are situated in choice locations, along the Rhine, on steep declivities, where the

terraces are built with stone, to sustain the soil. The estate where the famous Johannisberg wine is made, which brings fabulous prices, and is consumed only by the crowned heads and a few noblemen of Europe, is one of very limited extent. What there is in that soil which makes such peculiar wine, I cannot say. But there are choice and peculiar locations, where grapes will do exceedingly well. Grapes have been planted in uncongenial soil and unfavorable locations, and there we may expect failures. I have no doubt that grape-growing will be condemned because of these failures, but the fault was not in the grape; it was in the location, or perhaps in the nutriment the vine received.

Now there are any number of theories and any number of modes of practice in regard to the management of the grape. I feel as though I did not know but little about this matter, though I have been engaged in the business all my life. I will give you a few facts. Twenty-five years ago we had in the rear of our house a plum tree, so situated that it had only the morning sun until ten or eleven o'clock. On that plum tree grew an Isabella vine. It never was pruned; it had its own way; it extended all over that tree, and during all the years that I remember of its fruiting it never failed to ripen. I will say, in that connection, that I never have succeeded in ripening the Isabella so well but once since, with all our improved methods of training. It was protected by the house, and I do not think the mildew or rot ever affected it.

I have on my place a native grape—I mean a grape taken from the woods—planted there about fifteen years ago. It runs over an old black cherry tree. I never have failed to get a good crop from that vine. It never has received any treatment whatever. It takes care of itself—never mildews, never rots, and always ripens its fruit more perfectly than any vine I have had; and I have had two thousand. Right opposite, and within twenty-five feet of it, I have the Concord, which I have relied upon as the most valuable, take it all in all, in the country. That proved a perfect failure this year—a complete and downright failure; the grapes were not worth picking. I planted at the rate of eight hundred to the acre, trained spirally to posts six or seven feet high. My crop was a complete failure; I did not sell five dollars' worth of grapes, and I should have had two

or more tons. The foliage mildewed, the grapes rotted, and there was bunch after bunch with not one perfect berry upon them.

Take the Delaware. And right here I wish to say, that the theory that the vine makes too much wood, and is more apt to become diseased when over-cropped and over-pruned, will not apply to the Delaware. It is a slow grower—makes but little wood. I do not have to trim my Delaware extensively, and yet the Delaware mildewed with me so that I did not get a ripe bunch of grapes. It has mildewed, so far as I have heard, all over this part of the country very badly. About the Crevelling, I say, nearly as my friend the chairman has said, that it does not ripen its fruit well, and it does not yield as it did, though I admire it as a grape. Rogers' 15 has worked badly with me. It is a very rampant grower indeed. It will not bear cramping. You cannot confine it to a stake and have it do anything at all, I am perfectly satisfied. I know a vine that yielded seven hundred bunches of perfectly well-developed fruit that ripened nicely; and yet my large vine, that I cut in on the spur system and train spirally fails entirely. It makes an immense amount of wood and foliage, produces grapes that set sparsely upon the bunch, and then rot and drop off. It is as utterly impossible to grow them on a post as it is to grow some other of the more rampant growers in that way, and I should not recommend it. If a man wants to plant one of these vines he must give it room—allow it to grow.

Rogers' No. 4 did not ripen. It is no earlier than the Concord with me. Where it will ripen, I think it is one of the best market grapes—not for quality, but for appearance. No. 19 resembles it very closely, and rotted badly. No. 3 rotted badly. No. 7 mildewed so badly, that I have thrown it off the list. It will lose every leaf before the first of August. Nos. 3 and 9 I have thought considerable of, though I find that No. 3 mildews. With regard to the Iona, it has never mildewed very badly, but I have never ripened its fruit so that it was good. It is a grape of rare excellence—in the mere matter of quality, behind no grape in the country. My Israellas are not well established, but even they mildewed badly. My Hartford Prolifics, which have never shown any unfavorable tendency until this year, about the last of July showed a kind of rot that

I did not see on any other variety. It had spots of black, bitter rot, and my Hartfords did not more than half ripen their fruit this year. These Hartfords were on stiff, gravelly soil, well drained—a poor soil, and yet a soil that I regard as favorable to the grape—and a year ago, I had a magnificent crop. There were bunches weighing a pound on my vines, and I found that the grapes averaged about fifteen pounds to the vine. The vines were four years old—three years planted. That was excessive cropping, and may account, in part, for the failure this year.

One word in regard to summer pruning. I plant my vines six feet apart, and you see I cannot allow a great deal of space to each plant. I have therefore been in the habit of pinching back to the first bud beyond the last bunch. I do that, usually, two or three times during the summer. This year, I thought I would adopt a different plan, and allow the vines to make more wood. They made laterals six feet long, and ran into each other. I have failed this year; whether owing to that or not, I cannot say; I think not. My object was to strengthen the vine and let it make more wood, and not confine it and cramp it, as some caution us against doing.

I have tried some experiments in regard to manuring grapes, and I think we should manure very sparingly indeed. You cannot get any Diana fruit, if you manure it at all. I took the waste bristles from a brush factory and used them as a mulch—I did not dare to plough them in, because, as you know, they are very rich in nitrogen. I used them as a mulch, but after they had been there one year, I became satisfied that they were injurious, and raked them off. I would not apply coarse manures, but bone-dust, ashes, and old, thoroughly decomposed stable manure can be used with good effect.

I am satisfied that it is not best to work the soil frequently during the summer in the vineyard. I am satisfied that I injured my grapes last year by cultivating the soil frequently among the vines during the time of the growth of the berry. It is necessary, of course, to keep down the weeds; but I do not believe that it is well to go through the vineyard in the summer, when the roots are near the surface, even with the cultivator, which runs only two or three inches deep, for it will tear up the roots. I believe it is better to give them a thorough

cultivation in the spring, and keep down the weeds by mulching. About this matter of mildew in the foliage, I am at a loss to account for it. I am not in the habit of doing anything to prevent it. Sulphur is very highly recommended, and I have tried it, but did not see any very great benefit resulting from it. It is a very singular thing that in certain places there is no mildew. I was at Washington a while ago, and I went down to the experimental gardens. They have a very competent man in charge, and he has tried the experiment of building a roof over his vines, which protects them from the drenching rains, and from dew at night, and, to some extent, from very sudden changes of temperature. Wherever that roof was I noticed that his vines were free from mildew ; and I have seen a communication published by him since, in which he says that the vines were entirely free from mildew where they had that protection, but his other vines mildewed. I have no doubt that this is the explanation of the healthy condition of the vine to which Mr. Bull referred as growing upon his house. That is just what the grape wants. It is not subject there to the alternations and fluctuations of the weather. For instance, the sun being in the west, its rays fall upon the house, the wood absorbs the heat, and the grape is kept all the time warm. I am confirmed in this theory by the fact that there is no difficulty in raising Allen's Hybrid, the Sweetwater and Black Hamburg, in some instances, in the city, which I cannot do anything with in the country. Grapes need protection, and if you give them that protection you will see beneficial effects. Some four or five years ago my men were digging up some stones in a lot where we had some melons planted, and about one hill they piled the stones six or eight inches high. I told them to take them away, but they said they wanted to try an experiment, and they did, and taught me something. Those vines were as large again, at the end of ten days or two weeks, as the vines about them, everything else, apparently, being the same except these stones. They absorbed a great deal of heat and kept the melon vines warm through the night. The same is true of grapes. My friend Brown has his Concords trained over the rocks back of his place, and his grapes are all right ; he will never fail to have crops. So in Boston you get not only the direct heat of the sun, but the reflected heat from the walls of buildings.

Now, I am going to try this experiment. You will laugh at me, perhaps, but I do not care if you do. I am going to put a pile of stones a foot deep round some of my vines, and I am going to put an acre of vines into trees. My object is to get fruit, and if I can do it by letting the vines run into trees better than in any other way, then I will do that. "Is it feasible," you ask, "to grow trees for that purpose? Will the vines grow there without injuring the trees?" They do it in Italy, and why should not we? I am satisfied of one thing, that we prune too much. There is no question about it. The Concord grape will not bear all these processes of pruning to which we subject it. That is rather a rampant grower. I am satisfied that that is one of the causes of my failure this year with the Concord.

One word more. I do not condemn the Concord. More than half my vineyard consists of the Concord grape. I say it is the best grape, take it all in all, for market purposes, but I say that the grape for the vineyard is yet to be introduced here. It seems to me we want a grape of the size of Rogers' No. 4, of the quality of the Iona, of the hardiness of the Concord—and more so, because that rots in certain seasons.

Mr. BULL. You ask for a good deal.

Mr. HYDE. I do, and I am looking for just that good deal. When we get a grape like that, we can grow grapes with more certainty than at the present time; but, meanwhile, we must work along and take the best we can get. There are parties who advertise that they have 300,000 seedling grapes, and everywhere we find seedling grapes. May we not hope that out of all these we shall get the grape we want?

Mr. BROWN. Reference has been made to the effect of the morning sun. What is the value of the morning sun, say until ten o'clock, as compared with an equal time later in the day?

Mr. HYDE. I cannot answer very accurately. I am of the opinion that the morning sun is the best. A single word in regard to mildew. My experience agrees with that of others. It follows upon sudden changes in the weather. If we have a hot, scorching sun, and then a shower, you will see mildew.

A MEMBER. Does not this morning sun produce these sudden changes which you dread?

Mr. HYDE. No, sir. I do not think we can improve on nature in that respect. The Almighty has arranged that matter

a great deal better than we could. We have the sun gradually growing warmer and warmer, until it has attained its highest temperature. It is not that. But you take a day in summer, with the wind south, and your thermometer way up among the nineties; then comes a shower, the wind shifts to the north, and your mercury goes down until at night it is very chilly. These are the changes to which I refer.

It seems to me the mildew must be accounted for by the wet season. You will find that the mildew extended back into the interior as far as Syracuse, N. Y. At Rochester, they had an exceedingly dry season, and they had no mildew. The Delaware ripened perfectly. I was in Missouri, in September, and it was very dry all through that section of country. At Mr. Husmann's place, the vines were free from mildew. The Catawbas in the older vineyards were rotting badly. They had been spurred in very close. The new vineyards, that had only borne three or four years, bore healthy fruit; and I think in all directions where they had a dry season, there was very little mildew—scarcely any at all.

I was up at Madison, Wisconsin, and I never saw a finer display of fruit than I saw there. Rogers' Hybrids were very promising. The Delaware grew finely; some one went so far as to say that it grew more than the Concord. Coming back East, I found the grape was a total failure. The excessively wet season must be the cause.

Professor AGASSIZ. I was born, and have lived two-thirds of my life in a grape-growing country, and I feel deeply interested in the question, how the grape shall be grown here successfully. But I think it cannot be grown with perfect success until a prejudice which exists throughout the whole country is overcome. It is because I know that it is a prejudice that I would openly speak about it. Wine-growing countries are the regions where temperance prevails; where there is no drunkenness. They are countries where the traveller is helped to a glass of wine to warm and strengthen him; they are countries where the clergyman holds it to be an act of charity to give a glass of wine to him who needs comfort. That is the character of wine-growing countries. Here, the use of wine is considered a sin, and men who use it are considered men not deserving to be in the company of gentlemen. Now, I will say, that before I came

to this country, now twenty years ago, I had never taken a glass of water over a meal in my life; and I will say another thing, that as long as I have lived (and I am sixty,) I have never been flushed by the use of wine; I will not speak of drunkenness. I know that my mother gave her children (myself among the rest,) wine as soon as they were weaned, and I know that I have done the same with my own children. But, gentlemen, until you have overcome the prejudice which exists throughout the country against the use of the pure juice of the grape, as a daily beverage, you will never bring the cultivation of the grape to its right foundation, and you will not receive from that crop the return you are entitled to obtain. In countries where the grape is cultivated as the principal crop, the product from the sale of the grape is not the chief reward for the culture, it is the wine; and you will not be thoroughly successful, you will not have that variety of grape, you will not have those diversified modes of cultivation, which will secure its production on a large scale, until you have introduced the use of wine as a daily beverage in every household, and as the most wholesome beverage that can be added to any other manufactured article of food.

Mr. KEYES. I think we can say that we are getting bravely over that prejudice in Massachusetts.

Professor AGASSIZ. I wish not to be understood as saying that the use of liquor is a thing uncommon in wine-growing countries. It is only in those places where wine cannot be had cheap that brandy or alcohol in various shapes is taken as a substitute. That is not what I advocate. The evil results of the use of distilled liquors I know as well as any other man. I do not suppose that I need to insist upon that, in order to justify the remarks I have made in reference to the use of the unadulterated product of the grape in the shape of pure wine.

Mr. BULL. I was thinking, after I sat down, that the pruning of the grape has a very close relation to the disease of the vine. For instance, our friend, Mr. Hyde, who has closely pruned the Concord, has suffered severely—worse than any other person I have heard of. In my experience, those vines which were not pruned heavily escaped. Now there is a proper relation in this matter which I do not think, up to this time, we have been able to understand; and one reason for it is the different habits of

the different kinds of grape in the matter of growth. The slow-growing Delaware should scarcely be touched with a knife ; and yet some slow-growing vines must be pruned in moderation in order to get hardy and mature wood, or you run into mischief. Weak wood will grow scanty fruit, will not mature it properly, the evil grows worse and worse, and you lose your vine at last. These things all require observation, experience, skill, on the part of the grower, and, as I say, they are so qualified by different circumstances—hardiness of grape, vigor of growth, length of season required to ripen its wood and mature its fruit ; in one word, you have to adapt your method to each vine so absolutely that no fixed rule can prevail.

Now, then, if pruning the vine will affect its health, that is an important subject to be considered. Let us look at that a moment. The best Delaware grapes that were exhibited at our cattle-show, in October, were brought by a plain farmer who knew nothing about grapes, who had not pruned it at all, but let it grow up into an adjacent tree. He said it had got out of his hands, and so, instead of trying to restrain it, he took a whole cartload of compost and tipped it up on the root. (The Delaware must have high feed or you cannot do anything with it.) That vine grew remarkably ; bore a large crop for a Delaware, (which does not grow a large crop,) and the finest and largest bunches I have ever seen.

Pruning must depend, to some extent, also, on how you train your vine. If you train it on a pole you are limited to your six feet ; or, say you have two stems, to your twelve feet. You are immediately brought into this difficulty, that you must prune closely, because you have not room for your branches to extend ; your vineyard would be a swamp, and you could not get among the vines ; you must continue to summer pinch, also, which is the very thing you want to avoid, except the first pinching, which is legitimate. When your branches are only one or two feet long, and your blossom buds are set, you can pinch off the end and the sap is sent back to the bunches, and the growing leaves, then young and able to expand easily, will grow broad and large. Now the end bud pushes again, and what do you do ? You pinch it again. Your mischief begins then. You must let it grow. For that reason I do not use the pole. You must have extension. I think the pole will do for the Delaware,

and as it does not make much wood, the fruit will not be sheltered by the foliage so much as to intercept the rays of the sun. But if you have a strong-growing grape, like the Rogers' or Concord, you must adopt another method. Take the espalier. Let it run north and south, if possible, because you get more heat to the root in that way, and then train on the espalier, one arm or two, as you please. In the method copied from France, which has recently been popular, the several arms from the vine are led off diagonally, one above the other, commencing near the ground, and going on until the upper arm, in its diagonal course, reaches the top of the espalier; the next one will be, of course, a little under it, and so your espalier is all covered, and you spur that whole length. Now, then, whether you have two arms or one, whether these diagonal branches are single or double—going both ways—these spurs will make long shoots in the summer time, which, if you do not pinch them, will grow into these wide spaces, and ultimately they will nearly or quite reach the middle of these spaces between the espaliers. When you come to the time of pruning you must not prune your spurs too close, for if you cut back to one or two eyes, or even three, if the wood is strong, you will find you will not get so much fruit the next year, nor the best fruit. Let me speak of the Concord in particular—the variety I have had the most experience with; but the same argument will apply to all the strong-growing kinds. You should leave your spurs far enough apart to prevent their crowding each other the coming season. They should be, if possible, twelve inches apart, and not less than five buds should be left. I have left the whole of the fruit-bearing wood on some of my old vines this season, and from my experience I believe it is the best way. Now, then, the coming year these spurs, which are extending out from the espalier, should be led out laterally, on the line of the espalier, so that they shall not go forward into the open space so much as to crowd it. Again, your upper branches, which formerly lay upon the upper bar of the espalier, will grow into this space if you do not summer pinch them. You see the reason, then, for these spurs being put so far apart as twelve inches, so that the leaves will not lie upon each other, and so perish for want of air. If mildew appears, and your upper leaves go, you have a large body

of foliage on the long-growing shoots below them, which have been saved from mildew by the shelter of the upper ones.

Let me say, in regard to the Concord, that up to this year I have ripened my whole crop without rot, except here and there a berry, and without mildew. This year one-third part, perhaps, of a bunch would be unripe and unfit for market. The unripe berries were scattered in the bunch ; they ripened unequally, so that they were not marketable. Still this is the eighteenth year since my Concord first bore, and it is the first year it ever failed to ripen its whole crop. It has never failed to give me a crop during the whole eighteen years.

Let me say a word, in passing, about the profits of grape-growing. I have had considerable experience in that direction. I find it the most certain crop I grow. It never has failed. I expect, confidently, from five to seven tons to the acre ; I do not think I ever made so small a crop as half that. Suppose you take three tons to the acre, at ten cents a pound, there is \$600 an acre ; at five cents a pound, \$300 to the acre. A constant income, observe. The crop does not fail. It did not fail this year ; it suffered. In those two instances where the destruction was absolute, it was clearly to be traced to the imperfect method of culture ; scientific, I grant you, according to the books—quite too much so, but not the best method, in my judgment. Take half a crop, three tons to the acre, at five cents a pound, and you have a constant income of \$300 to the acre. Tell me what husbandry will pay so well as that ?

Mr. HYDE. A great many things will pay better. Strawberries will pay a thousand dollars an acre.

Mr. BULL. I will not combat your proposition, but I will state what I have learned about it, upon inquiry. You will observe, the grape requires very little labor, very little care. You plough in spring and keep down the weeds in summer ; your vine is hardy ; you never take it down ; there is no tying up, it fastens itself there ; you let it run into space. You do not put on much manure. You want a little dressing—lime, phosphate, in some form, wood-ashes, and, if your vine grows weak, some nitrogenous manure—perhaps guano and ashes would be the best. The cost, then, of manuring and keeping your vineyard up to the time of harvest (I am testifying from my long experience, and other grape-growers will corroborate

the statement,) is not greater than that of making a corn crop. When you come to the harvest, your grapes may be picked by invalids, old people, children, just as well as by strong men. It costs you very little to harvest. After harvesting, if you want to make your grapes into wine, you can make 600 gallons in a week or so, going through all the processes, with an ordinary press, like a portable cider press. If you send the grapes to market, you would want them picked carefully, and it would be more trouble. They have brought in the market, when perfectly ripe, twenty cents a pound. The market broke down this year, not with an over supply (because there was not an over supply, nor so many as last year,) but because they were really not fit to eat; the season had spoiled them. Persons who ate them found that, instead of being digestible, healthful, comforting, they were the opposite, therefore they would not buy them, and therefore the market broke down. I have no idea that so low an average price as ten cents a pound can ever be reached. I have no idea of it, because I remember that, thirty years ago, the market price of ripe Isabellas was but ten cents a pound, and now, with the abundant supply that we have from the West, they sold, last year and the year before, for ten and twelve cents a pound; in some rare instances, very perfect bunches sold for a shilling and twenty cents a pound. Now, the Concord, or any other grape, should be sent to market only in its best condition. Your best and handsomest bunches are the profitable ones to sell; they will bring you the most money. The remainder you should make into wine. There are many reasons why you should do this, I think. In the first place, it saves you from all loss from imperfect bunches; they are turned into money, through the wine. You want to sell the wine; but if every man makes his own wine, out of his own vineyard, from the imperfect grapes which he cannot send to market, my word for it, you will not drink those intoxicating drinks which it is the habit of our people now to use, because, as I think, they do not have these wholesome drinks of domestic manufacture. You have had testimony to that effect from gentlemen who must be accepted as authority in this matter. In the work I have quoted, Denman's work, on "The Vine and its Uses," there are abundant quotations from eminent travellers, physicians

and others, in wine-growing countries, all going to prove that where the vine is found, in most abundance, there is no intemperance; that the people are healthy, temperate, thrifty and cheerful. A clergyman of this State, who passed two years in France for his health, going all over it, for the most part on foot, told me that in all the wine districts he found temperance, but the moment he got into those districts where the grape could not be grown, where they drank beer and brandy distilled from the potato, and from beet-waste, there he found intemperance immediately. And that is the universal testimony. Now, all the world will have stimulants, for necessities; for debility arising from sickness, or age, or that form of disease—if it is a disease—dyspepsia, where you cannot digest your food. Physicians prescribe stimulants, and until an abundant supply of wine is made, these noxious drinks will be used. It seems to me that it is not only better for us to use wine, but better for the cause of temperance. I believe that, and I have acted upon it. My cellar is full of wine. I will not sell it against the law. If the law never permits me to sell it, it will stay there until my friends help me to drink it. I might have received as much money, perhaps more, for my fruit upon the spot, but I thought I would work out the problem for the benefit of the State, and for the benefit of temperance. I was once an ardent temperance man, and believed and said that spirits should never be used by anybody, sick or well. I believed it, honestly, and I urged it upon our people. By-and-by, I fell sick myself, and my physician said, "You must take spirit with your dinner." I objected; said I could not do it; that I did not believe in it; that I had always preached the other doctrine, and I would not do it. I did not do it; for a whole year I suffered, until I was finally driven to it, and then I began to think that possibly I might be mistaken. Now, since it is certain that stimulants must be had, it would seem to be wise to supplant those which we have, which lead to intoxication, and have a wholly different effect upon the system from pure domestic wines, by wines made in our own land. They will be light. Wine cannot be transported unless it is strong, and therefore the foreign wines are strong.

But I am wandering from the question. There are other aspects of this question which I should like to touch upon,

especially that to which my friend Hyde has referred, in his suggestion with regard to the necessity of getting, through reproduction by seed, better grapes than we have got now. I should like also to touch upon the question of cross-breeding, or hybridization; but I have already occupied a good deal of time, and as the usual time of adjournment has arrived, I will move that we adjourn until 2 o'clock.

The motion was carried, and the meeting adjourned until the afternoon.

AFTERNOON SESSION.

The Board met at 2 o'clock, Capt. MOORE in the chair.

Mr. BROWN. I would like to ask Mr. Bull one question—whether his poor grapes make good wine or not?

Mr. BULL. No, sir; it takes the best grapes to make good wine. Poor grapes will make the best vinegar. Vinegar made from wine is superior to that made from cider. It carries the flavor of the grape, and is generally worth twice as much in the market.

Our friend Mr. Hyde says he wants a grape that shall be hardy, handsome, large and excellent. Well, we shall have it in time; but that is a work of time. Your seedling is a good many years coming into fruit, and when you get it it may have some qualities that you do not want. I think we have good ground to hope that we shall find it in the end, for out of the many thousand seedlings which I have raised, I have twenty or thirty, all of which are *better* than the Concord and an improvement upon the parent, and some of which, grandchildren of the Concord, are of exquisite quality, perfectly hardy, and ripen before the end of August. I take this method. If I have a grape which is eminently large and handsome, but not of quite so good quality as I want, I plant the seeds of that grape, (making a proper record of it,) and grow them, in the expectation of getting equally large grapes among its seedlings, and some one of better quality. If I have one eminently beautiful, but not equal in other respects to what I want, I plant the seeds of that by themselves, (keeping the same record.) So I follow up all divergencies just as you keep the record of each family of your blood stock when breeding them. I keep each variety by itself, instead of promiscuously throwing them together. I

keep the white grape by itself, the black grape by itself, the early by itself, the large and handsome by itself, and each quality by itself. I follow them all up and put them upon the record, and breed in successive generations from that point forward. In that way you may be sure of hardy vines; in that way you may ultimately get, I hope, all those qualities in the grape which are so much desired.

It has been recommended that the seeds be put, in the autumn, into a pot, and placed in the greenhouse, where they will vegetate readily, to gain by that method the winter growth. But I do not think it a wise method. I think a seedling born in a hot-house and nursed in that atmosphere is very likely to be debilitated. I know that if they grow in the open air they are almost certain, (in my experience I should say absolutely certain,) to be hardy, at least, and of vigorous growth. The quality will be various, to be sure, but you will be sure of that prime necessity, hardiness.

My method is this. In the autumn, I prepare a bed with the spade, turning over the ground to the depth of the spade. I enrich it with phosphate of lime, with wood-ashes, and with nitrogenous manure. You may use saltpetre or nitre. Night-soil, well composted, is perhaps equal to any other. I make the bed rich, so that when the young seedling starts, it may find abundant nutriment. I plant my seeds in this bed. In the spring, when they start, the young leaves are very tender, and must be shaded, at first, from the hot sun. After they have two or three leaves, they require no more care, except, if the season prove very dry, an occasional watering. I leave them in that seed bed usually two years, during which time they make strong roots, get well established, and make a good piece of ripe and strong wood. Then I transplant them. They need not be more than two feet apart, because they will shield each other from the hot sun at that distance, and you will have so many to reject, that there will be space enough for the remainder. The soil is prepared as you would prepare it for corn, with the addition (which must not be forgotten,) of phosphates and wood-ashes. There they grow, two, three, or four years more. I have had them remain ten years sometimes, before bearing, but rarely. In the fifth or six year, they will bear, and when they get their first bunch, you will be able to

say pretty nearly what they are going to be;—not quite, because, as they grow older, the quality, etc., improves. If it is good at first, you may be sure it will be better afterwards. But among them you will find a great many which will revert back to the wild stock from which they sprung. Some of them will be wilder than anything you ever saw before, in the first generation. I had some of the Plymouth County white grape sent to me—beautiful to look upon, and very good to eat; and I expected confidently to get from them a large, fine and improved white grape. I obtained two hundred seedlings; I had fifty fruitful ones, and not one of them was white. They were black, mostly; two or three were red or brown. Some of them were sweet, but not a sufficient advance to prompt me to go on with that experiment, because I had already got beyond the second generation with the family I was experimenting upon.

Let me say another word about famous grapes. There is not to my knowledge, in this country (though hundreds have been raised,) a seedling from the Isabella equal to the parent. It is not, in other words, a good breeder. That has been true, until recently, if it is not true now (I believe it to be true now,) of the Catawba. Though it has given seedlings bearing larger berries, it has never yet given a grape equal to itself for the table or wine, unless the seedling which Mr. Poesel the German wine-maker at the West, has on trial should prove to be a better grape than the Catawba.

Mr. HYDE. The Diana is from the Catawba.

Mr. BULL. It is; but the great majority do not consider it equal to the Catawba to-day. I like it; it has a peculiar flavor, most agreeable to me; but I never saw a Diana equal to the Catawbas we had on the dinner-table to-day.

Now the Catawba is better in some localities than others; and so, also, the Diana. It is claimed for the Diana that at the South it is superior to the Catawba. I can well imagine that to be true, because soil and climate have great effect upon the quality of the grape. I have seen Isabella grapes grown in one location so sour you could not eat them; and I have seen Isabella grapes grown in another location—in Boston, on the side of a house—that were exquisite. Location, season, soil, vigor of vine, mode of pruning—all these go into the quality of

the fruit at last. But wherever a family of grapes is found that does produce better grapes than the parent, that would be the best to work with. The Concord has already produced, in other hands than mine, admirable grapes. Mr. Miller, of Pennsylvania, has grown, from seeds which I sent him in 1856, a large white grape, described as sweet as honey, and large and handsome in bunch. I have seedlings from the Concord better than it, and grandchildren better than the children.

Now if, in four generations, I have made that constant improvement, then I think we may be encouraged to believe that sometime in the future, though we may not see it, in the course of half a century, perhaps, we shall have grapes equal to the choicest of those in Europe. An eminent French gentleman told me, after eating some very ripe and fine Concords at my house, that he believed we should have the best grape in the world and the best wine in the world. It would not be like the wine of other parts of the world, but it would be better. He explained that the too pronounced flavor of our grape would be ameliorated to a rich flavor, that would surpass the simple sweetness and delicacy of the European grape. I think our friend Mr. Flint, who saw the White Riessling in Germany, has stated that he found it harsh; and yet is a good wine grape. That seems to be true of the grape—that if it be harsh for the palate, and even unfit for the table, it may yet make excellent wine. That is the case with the grape that makes port wine. It is almost inedible it is so rough, yet the wine, when old enough, is the finest wine in the world.

Now I want the members of the Board to help me work out this problem, because, in the multiplied instances of reproduction, we shall be more sure to meet with perfect success. If you grow a seedling in soil like mine, and a location like mine, and where all the circumstances of climate and weather are the same always, it gets fitted to these conditions, perhaps, and accomplishes what it is equal to under them; but if it be grown under other circumstances, in other soil, some of which would be more favorable, in a different climate, if, in short, you bring it under the effect of *different* influences, you would be likely to have a different and possibly better result. *You multiply the chances of success.*

I met a veteran pomologist in Boston who had recently been to the West and to Europe, who is pretty confident that the Concord is a hybrid, and who believes in hybridization as the only method of improving the fruit, and that seedlings apparently not hybridized have been accidentally hybridized by birds or in some other way. He believes that the improved pears are to be the result of such hybridization, either done on purpose or by accident. Now, with regard to the pear and other large-blossomed fruits, it is very possible, because large insects can get into them, and, going from one to the other, may carry the pollen of one, when it is ripe, to the stigma of the other, the pollen of which is not ripe. But with the grape it is different. Not only is the blossom so delicate and frail that it will not support an insect of any size, but the pollen is ripe, almost uniformly, before the calyx is thrown off; and in the act of throwing off the calyx the pollen is distributed upon the stigma, and it is instantly impregnated by that act. The warm sun in mid-day gives the calyx a sudden impulse and it flies off; if you have a magnifier in your hand you can see a delicate cloud of dust in the air; and if there is a grain of pollen deposited upon the stigma it is instantly impregnated. Occasionally the elongation of the anthers will throw off the calyx before the pollen is ready, and in that case you can impregnate it; or if by any accident the pollen from another grape vine should fall upon it, it would be impregnated. These circumstances would very rarely, if ever, occur together; but still, it is not impossible. There are other cases where spontaneous cross-impregnation is possible, without the aid of man. Suppose you take an Oporto grape, which has naturally defective stamens; they do not seem to have vigor enough to throw off the calyx in due season, so that oftentimes there are but three or four berries set upon a whole bunch; and yet the germs were there, and the stigmas were ready to be impregnated. Now those unimpregnated stigmas might have the pollen from another vine shaken upon them by the wind, or in some other way, and thus cross-impregnation takes place.

I think the better method is, to watch your vine until some of the calices begin to fall, and then, with a delicate pair of tweezers take them off, and with a pair of sharp scissors cut away the stamens, and impregnate artificially. That can be

done, with the aid of a powerful magnifier. I have explored this matter pretty carefully. I have observed with great patience, in two cases, this very thing. I have raised hybrids; and I found it necessary to go through all this careful method. I have spent the time, under glass, where I could see, from that moment in the morning, when, under the stimulus of the advancing sunlight, the blossoms began to throw off the calices until that time in the afternoon, when they ceased to be thrown off (usually from nine o'clock until four,) with a powerful magnifier, and an assistant to help me, watching this process, and attempting to effect this artificial impregnation; and I have seen that in nine cases out of ten, there is instant impregnation. In the tenth case, whether you take off the calyx yourself, or find one where the pollen on the anthers has not effloresced, but is close and compact, you will introduce the pollen from the other grape. You cut away these stamens, and with a delicate camel's hair pencil, put the pollen on the stigma. In two hours after the pollen has been put upon the stigma, you will see the germ, which was before perfect in form, begin to swell irregularly, so that, under a powerful magnifier, it will look like a swollen specimen of the Duchesse d'Angoulême pear. If not impregnated, it will retain its form until it perishes.

Hybridization, then, is possible. It is a work of skill and patience, but is not impossible. I stated to you at Greenfield, that I suspected that Mr. Rogers had not succeeded in hybridizing, but that he had done exactly what I had done; that he had taken a seedling from the wild grape, and raised seedlings from that, which he supposed hybridized, and got, in the second generation, those successes, as I had got the Concord in the second generation from my experiments. That was the opinion expressed by Mr. Hovey, and the opinion entertained by eminent grape-growers throughout the whole length of the country. I supposed that to be true at that time. But I am perfectly sensible now, from long experience with Mr. Rogers' grapes, that he did hybridize the vine. It is much to his honor and to the credit of his skill that he has succeeded so largely and so well, that he has done the public such service.

Suppose you have hybridized, however, you have crossed your native, vigorous stock with a foreign stock, to obtain the fine

quality of the foreign stock. But you do more than that ; you infect the native vigor of the original vine with the delicacy of constitution of the foreign vine ; and accordingly it happens that these hybrids, so far as my experience goes, without exception, require protection in the winter. Some of Mr. Rogers's hybrids are hardy without protection in some places ; but I have not yet seen an instance, among all my acquaintance, where they have stayed out all winter without losing their wood. I have to cover them. They are fine grapes and are worth the trouble. But, as I have said before, in vineyard culture you cannot afford, where labor is so costly, to take them down by the acre and cover them up. I do not know but that it may be possible, in time, to raise a grape adapted to our climate out of the foreign stock, even ; and I ought to say here, that a seedling from the Black Hamburg is growing in the open air in Belmont which has borne fruit as large and handsome, and, the originator thinks, as good as the Black Hamburg. He says he covers it carefully in winter, but it grows in the summer and ripens its fruit—late, to be sure, but still it does ripen it. I suggested to him that in a favorable season, when he got a perfectly ripened bunch and well ripened wood, that he should take the seeds and put them in the ground, and so continue to try to acclimatize the grape. Such a thing seems possible, though the process would be slow. I would prefer the other method of dealing with our native stock, which has the vigor and adaptation to the climate which are necessary for us in this rude North. I should prefer to ameliorate that by successive reproductions from seed.

Now, of the pulp which surrounds our native grape, I will say that, in my belief, it is nature's provision to secure the continuance of the species. It is a placenta-like substance, which nourishes the seeds when, at the end of our short season, the grape falls prematurely. My belief is strengthened by the fact that the Concord, grown at Jacksonville, Fla., as a friend there advises me, has no pulp at all, and is, to use his precise words, "of exquisite quality, and more agreeable to his palate than the Hamburgs which he grows." If so, then, when we shall have a grape early enough to ripen in the *heat of the season*, at a time when the climate is like that at Jacksonville, that may attain that quality here. If we can ripen the grape in August,

we get rid of the pulp. That is no longer a problem. I have done it. I have grapes without a particle of pulp and of great delicacy of flavor which ripen in August, but I have not a late grape which does not have some pulp; and this year, which was cold and wet, the Concord had more pulp than I ever saw before. The pulp melts away, in other words, in those climates where the season is long enough to ripen it to perfection, and where nature is no longer put to the expedient of surrounding the seed with it to accomplish her purpose of reproduction. Now, if that be true, we have only to get at the right stock; and beginning with the earliest and best specimens possible, follow reproduction from that until we get a grape that will ripen in August. I think the prospect is full of encouragement. Man passes away, but plants remain; and when we have all passed away from this stage and this time, when so many are in doubt whether vineyards can yet be planted here to profit, our descendants will see this Massachusetts planted with vineyards, furnishing grapes of excellent quality and an abundance of wholesome wine.

Mr. BERNIE. I see several gentlemen who can talk to us very sensibly on the subject of apples and pears. Some of us would like to hear something on that subject.

The CHAIRMAN. The subject is open. I think the members of the Board would like to hear from Mr. Clement.

ASA CLEMENT, of Dracut. I do not know that I can say anything that will be interesting to any one. It was intimated to me that something might be expected from me, and I set myself at work thinking over the matter, to see if there was any branch of the subject, pertaining more particularly to apples, which I had not touched upon during the last three years, in some of the meetings of the Board. I could scarcely think of anything; and then, my experience during the last year has not been very encouraging. My apple crop has been the poorest I have had for several years. I had no new varieties which came into bearing, although I had grafted many, which I was hoping to introduce to the notice of the Board and others; but my hopes were blasted. Consequently, I have no new varieties to remark upon, nor have I tried any experiments during the last year which could throw any light upon the question of the cultiva-

tion of the apples or give any encouragement to any individual in relation to the raising of apples.

But I will remark upon one point which was touched upon by my friend Mr. Hyde, this morning, namely, this dry weather theory, as affecting the apple crop. I have heard it broached before. Gentlemen have said to me, that owing to the two dry seasons that we had in succession, the tissues of the wood were not sufficiently matured, and consequently the fruit buds were not in a state to bring forth fruit, although they would blossom. I thought, at first, that possibly there might be something in that; but I remembered distinctly that I had a row of Hubbardston trees, on the upper side of an orchard, which I planted some seventeen years ago, and on the driest part of the whole ground, which gave me, last year, the best crop I ever had. There certainly had been no water carried there by any artificial means. I have no doubt the ground there suffered immensely, and the trees suffered, by the drought of the preceding year, yet they gave me this large crop. There was no extra cultivation. It is true, the land was cultivated twice or thrice during the season. I do not let the grass grow round the trees, and cultivate the ground to keep it in a tolerably loose condition about the trees, and all over the surface, that is all. Then in the same orchard there was one Minister tree, which I planted for experiment, and which had not failed, up to that time, to produce excellent crops in alternate years—it had not overborne, but just enough to have a good substantial crop, and they grew very large. Gentlemen who have been in the habit of attending our exhibitions for the last ten years will remember seeing some very large Minister apples which I exhibited on several occasions on the table here. In 1866, this Minister tree produced the largest crop it ever had. They were small apples, to be sure, but there was not room for them to grow. I went and pulled off a bushel when they were the size of walnuts, but I did not get off quarter enough. The crop, consequently, was almost a failure, because of the inferior size, and quality also. They were never so inferior in quality. Then I had other varieties which produced excellent crops. What I call the Russet Sweeting, for instance, known in some localities as the Cathead, in some as the Ladies' Sweeting; an apple resembling the New York Russet more than anything I

know of, but sweet. It is an enormous bearer, and worth cultivating for the sake of feeding the apples to stock, if you could not sell them; but the last few years, I have had no difficulty in selling all I could raise. These cases seem to upset, in my mind, this dry weather theory, in relation to the destruction of the apple crop.

I must confess that I do not know, I cannot imagine, why the crop has been a failure. I have no idea of the cause. I have observed as closely as I could, and I have tried to find out, for my own gratification and for the benefit of others, if I could, but I have come to no conclusion in relation to the matter which is at all satisfactory to me, or can be to anybody else.

A MEMBER. Were not those trees shaded?

Mr. CLÉMENT. They were pretty well shaded. The Hubbardston is a tree which is inclined to spread, not an upright grower, like the Northern Spy, but it branches low, and inclines downward. The branches of the tree shade its own roots to a considerable extent, more so, perhaps, than some other varieties; but I should not think that was enough to make any material difference; I should not judge it would.

Mr. Hyde suggested that the apple required, perhaps, more moisture than the pear. That may be true. It is possible that it does require more moisture, but still, I am not able to say that distinctly. It is pretty well known that the apple strikes its roots near the surface. It does not penetrate the earth so deeply as the pear. I believe everybody who has had any experience will acknowledge that as a fact. Consequently, in a dry time, the roots of the apple tree must necessarily be very much sooner affected than the roots of the pear. This very Hubbardston tree to which I have alluded belongs to a variety whose roots almost always strike out very near the surface. I think I alluded last year, at Salem, to the difference in rooting of different trees, and stated that I had noticed this difference in the nursery, when I have been growing trees. When the trees have been growing three or four years, I find there is a vast difference in the roots. The roots of the Blue Pearmain, for instance, strike downward, and root strongly. Sometimes it is rather difficult to get it up with good roots. That is my experience. The Hubbardston may be in the next row, in soil just precisely the same, as near as you could imagine, will

spread its roots on the surface, and be vastly better rooted for the purpose of removal. I do not know how to account for that difference. But there is an analogy in the growth of the head also. That is another thing that I have observed. Sometimes I find a tree inclined to stretch upward, and not to branch properly, so that I have to cut it in order to make it form a symmetrical head. I find very frequently, almost invariably, that these trees have roots corresponding with the top. I do not know why it is so, but I know it is so, in a great many instances; but you will find that trees which spread their heads and incline to branch, are trees which incline to throw out their roots horizontally, and which are easily lifted from the nursery.

In regard to insects, I will say that the curculio is about as troublesome to apples, sometimes, as to anything else. I know they often damage the crop very materially. Quite frequently you will see the ground covered with apples fallen prematurely, when they are the size of cranberries or a little larger. They contain the worm which contains the embryo curculio, which becomes a perfect insect pretty soon after the fruit falls. I remember making some observations upon that point not many years ago, with regard to some Washington plums. They got very nearly grown, but still continued to drop until the crop was gone. They were pretty large, and I knew the embryo insects would have time to mature in them before they would shrivel up, and I put a few of them on a little clean sand and covered it with pots. At the end of ten days I looked at them very carefully, and found the curculios in various stages of development. Some of them had begun to go through with the transformation; on some we could see the legs starting out; on others the wings, but they were white. Others had got so nearly matured that they had got a sort of grizzly complexion, and were nearly ready to fly. Now I have no doubt that the first ones that go to seed, (if I may express it in that way,) are ready to go into the trees and do mischief as a second crop. I do not know how many they will breed during a season.

Then there is another thing which I have tried to learn—and that is where the curculios are during the autumn and winter. I have not been able to satisfy myself where they are. They are evidently somewhere, because we can shake them from the

trees and secure them just as soon as they can get a plum to taste—before the blossom is off the skin. Then I have observed that they seldom deposit their egg until the plums get a little larger size. They begin to work upon them, cutting and slashing round ; but I have never seen them sealed up until they got to be of a larger size.

In regard to borers, I remember that I went into that subject at a previous meeting; and recommended the protection of a class of birds, various woodpeckers, which I know feed upon the larvæ of these insects. I have frequently seen where the woodpeckers have taken out the borers ; and as they destroy no berries or other fruit, but are entirely carnivorous, if I may use the term, I think it is well to protect them. With respect to some other birds, my sentiments have been somewhat modified ; but of that I do not wish to speak at present, perhaps not at all.

I do not think of anything more in relation to the apple which can be of interest to any one ; but if any gentleman has any question to ask, I will try to answer it.

Mr. BIRNIE. Have you any remedy to suggest for the curculio?

Mr. CLEMENT. Yes. It is one which will require considerable patience and perseverance. It is to pick up the fruit and destroy it by some means. Perhaps you may boil it for the pigs or throw it into the river. Get rid of it in some way. Let the children, or anybody who can attend to it, pick up the fruit which contains the worm, and which will eventually contain the curculio, and destroy them. This plan will not destroy them all, it is true, but it will diminish the number. I once had a plum orchard of some seventy-five trees that began to bear very nicely, and I raised them in spite of the curculio. I bought some cheap sheeting and made some large square sheets, with a split half way up in the middle, and went around twice or thrice a week, with the children ; one of the sheets was held up round the trees, and I kicked the trunk with rubber boots, and jarred the curculio down and killed them at once. We could thin them out in that way. A little attention would save an abundant crop.

Mr. BIRNIE. What time of day would you recommend ?

Mr. CLEMENT. Almost any time except midday. This matter of fastening cotton round the trunk of a tree is all humbug.

The curculio flies as much as the bee does, or any other insect, and I think very few of them are ever tangled in cotton round the trunk of a tree. Possibly there may be one caught occasionally.

Mr. BIRNIE. Do you think they take refuge in the ground during the winter?

Mr. CLEMENT. I believe it is the general impression that they do, but I have never been able to find them there. The curculio is a very cunning little insect, anyway. The moment that you frighten them in any way they coil themselves up and look like a minute dead body. You have to look closely to discover the difference. But they will soon scamper away. I am unable to say whether they burrow in the ground or are lodged round in crevices on the rough part of the tree, or in walls, where they can find shelter.

A MEMBER. Do hens eat the curculio?

Mr. CLEMENT. I have noticed that people have sometimes inclosed their plum trees in their hen yards, and have saved the fruit thereby. Whether it is in consequence of the hens eating the insects, or whether the insects themselves have an instinct which leads them away, I am unable to determine. I have observed this: that where plum trees hang over a brick wall or anything of such a nature that when the fruit falls the worm that comes from it cannot crawl into the earth, the curculio does not injure the fruit half so badly as in other places. Indeed, I have had crops escape that were hanging over a wall where there was nothing but a pile of boards put up, and then a temporary roofing put over them by laying short pieces down and then battening the boards up, to shut off the rain partially. My impression is, that the insect has an instinct which teaches it that that is an unsafe place to deposit its eggs, where the fruit is going to fall upon any substance where it cannot be sheltered. I do not know how that may be.

I did intend to touch upon peaches briefly, for the reason that peach trees have nearly all failed in Massachusetts. There are but very few in the State, and I think none, six or seven years old, which are in a perfectly healthy condition. My experience has been, that after peach trees have been bearing a few years, or even if they are young and vigorous, if there comes a very severe winter, it almost freezes the vitality out of them. They

sometimes live along and bear a few peaches, but you will find that they are brittle, a little touch will snap them, and you will observe that the heart is all dead ; there is just a thin skin round the surface—the rest appears to be dead. I think that the bulk of the peach trees in this city are in that condition.

Now, peach trees fruited pretty well last year—what there were of them—in the vicinity of Lowell, and in other localities. The trees bore pretty well, produced good specimens of fruit, which brought a good price. I have some neighbors and acquaintances in the town of Tyngsborough, who had an excellent crop and obtained a very high price for them. Other neighbors in Pelham and Hudson were in the like condition. The demand for peach trees last spring was considerable, and many wanted to plant who could not obtain them. If the fruit-buds are not winter killed the present winter, but come out all bright next spring, the demand for trees will be great—you may rest assured of that. I have noticed this for twenty years—that if the peach crop is a failure, the next year there will be little demand for trees, and if there is a good bearing year, there will be a great demand the next season. It is so in a measure, with regard to the apple, although that is not so fluctuating. I find it takes but little to discourage us with regard to any enterprise. It is just so with the grape. A nurseryman came to my nursery last fall, who did not have so many grape-vines as he wanted, and told me one of his neighbors was going to set out some, and he wanted 500 for him, and thought he should want 500 for retailing. I showed him round, and told him, “There are three thousand Concords, two years old, and you may have them thus and so.” He told me to write him when we got ready to lift them, in October, and I did so. In a day or two, I got a reply, saying that grapes were so bad, that the man had abandoned his plan entirely, and was not going to have any. It is remarkable that such things do discourage men. I have not lost my crop of grapes for ten years. No other crop has done so well ; no other crop is so sure, unless it is the currant, and that I do not consider of any consequence. This year my grapes were a total failure—not worth gathering. I might have made vinegar, I suppose, but I had plenty to do, and I let them rot on the ground. It seems to me folly for persons to get discouraged in relation to

any crop of fruit, because there is an occasional failure. I expect it of any and all my crops. I never expect to get a crop of everything I plant, in every year. We are not so wonderfully favored as that, and I am not sure that it would be the best thing that could take place for us; at any rate, I never look for it. Of course, when I plant the seed, I expect a crop, but I expect an occasional failure. We cannot tell whether our buckwheat will fail or not. We may sow it early, and it may blight badly. Our rye may blast or rust. We cannot tell about these things; we can only plant the seed, and hope for the best. If we do not succeed in everything, I do not think it is best to feel the disappointment heavily; I do not think it is best to lay it to heart, or let it bear us down, give us the blues, or do anything else which shall disturb our equanimity.

A MEMBER. Can you give us any remedy for the difficulty with peaches?

Mr. CLEMENT. I do not think anybody can give any remedy, by which we can save all the peaches. I remember when at the exhibition, at Framingham, a year ago last autumn, I saw only one plate of peaches on the table, and they were raised in Middlesex County. I asked the gentleman who raised them how it happened, and he said he had a tree one of the branches of which lay along almost horizontal, very near the ground, and in the autumn he threw a load of corn shucks all over it, and hence the fruit buds were not killed. When spring came, he uncovered it, and that one branch bore a fine crop of peaches. I say it is possible, practicable and feasible to so train these trees, by beginning early, that the branches may be protected in that way during winter, and a good crop secured.

Mr. HYDE. What do you think of cultivating them in pots, and taking them in?

Mr. CLEMENT. I think it is safe, but it is, of course, a little more expensive. Still, it is worth trying. A peach is regarded as a great luxury, and if by planting a dozen trees in tubs or pots—any cheap article—so that they can be taken in in winter, and placed where they shall not be injured by our severe seasons, we can secure a crop, I think it would be better to have them. My experience is, that a little freezing will not hurt them, but I am not sure of that. I know peaches are raised in that way. I have seen them on the tables of the

Massachusetts Horticultural Society, and it is a very beautiful sight; exceedingly ornamental. A little tree, the size of a whip-stock, three feet high, trained symmetrically and handsomely, with four or five dozens of early Crawfords upon it, looks beautifully. I do not know why people who raise things for ornament should not go in for peaches as well as everything else. They certainly would be ornamental.

Mr. HYDE. Why not profitable?

Mr. CLEMENT. I have no doubt they would be, to raise for the Boston market, where they pay such high prices. I learn that some of the fairest peaches sell for a dollar apiece.

Mr. HYDE. Three dollars.

Mr. CLEMENT. Three dollars? Well, I believe they could afford to grow at that price. I suppose there are some people, probably enough to take all we can raise at present, who are ready to pay these high prices. I know there are men who have to contrive ways and means of spending their income, and it is fortunate for us poor people that there are such.

I think our friend Mr. Hyde alluded to mulching grape-vines with bristles from a brush factory. I hardly approve of mulching grape-vines under any circumstances; there may be exceptions. Of course, if you mulch a grape-vine with bristles or leaves or rubbish of any sort, you shade the ground; it will be a little cooler, it will be more moist, of course; it will attract the roots up there, so that you cannot cultivate the ground without taking off certainly many thousand fibres; and I like to have the sun shine upon the soil round a grape-vine.

Mr. HYDE. That was only an experiment.

Mr. CLEMENT. It was very well to try it, but you would not recommend it after trying it?

Mr. HYDE. No, sir.

Mr. CLEMENT. I should not recommend mulching grape-vines, except perhaps under some peculiar circumstances. Where the roots come very near the surface, and there is great danger of drought, perhaps an occasional mulching might preserve the vine.

The matter of pruning grape-vines has been alluded to, and I had intended to say a word in relation to it. I wrote to Mr. Bull a year or two ago, and told him that the remarks he had made at one of our meetings—I do not remember now where—

more nearly concurred with my views than those of any other gentleman I had heard speak upon the subject. I do not believe that this eternal pinching and nipping and cutting and slashing is any benefit at all to our rampant-growing vines like the Concord and the Hartford. I have tried some experiments for the purpose of testing that matter. Two years ago I had a row of Concord, each vine tied to a single post—no trellis, no rails, no wires, but each vine was simply tied up to a single post. They were equidistant, and so far apart that I could prune any one in such a way as I pleased, and leave another. I intended to try an experiment with that row, and I continued last year, as I had done the year previously, to pinch every alternate vine about the time the blow showed, leaving the others to take their own course. They were late about starting. I remember that it was not until about the Fourth of July that the grapes began to show. It was late, but still they looked healthy, and started fairly, with large clusters, as I thought. But the frequent rains we had, followed by a scorching sun, affected the leaves badly. They seemed to be water-soaked and tender, and the sun seemed to scorch and crumple them up, and they began to drop off pretty soon, and before the grapes were nearly grown some of the foliage began to drop, so that my experiment was entirely broken up. About the tenth of July I went to look at the vines, and found they had begun to mildew in the bunch; not every vine nor every bunch, but a large share of them were mildewed; they looked mouldy, and they were so far gone, and so large a proportion were affected, that I thought it would be useless to attempt to check it. I found it did not spread any more, and it is my impression that it was all done in a day or two—about the time that Mr. Hyde described this morning, when we had those sudden changes from dry to wet and from heat to cold; three or four in the course of twenty-four or thirty-six hours. It was all done during that time. And it stopped almost as suddenly as it came. It was pretty general, also. There were scarcely any vines that escaped except those which we regard as worthless, like the Clinton, (which retained its foliage until it froze up in October,) the Early Strawberry, (which is another of those wild natives,) and one or two others, which I do not think of propagating now; but I have one or two vines of these varieties upon the place, and keep them there, because they have been

bearing for a number of years, and I dislike to cut them up. I can sell them for making jelly, and I am about as sure of them as Mr. Hyde was of his wild vine ; and sometimes I think them about as profitable as anything on that account.

I should recommend, most certainly, if any one was planting a vineyard, whether large or small, the selection of dry, warm soil, and a location not liable to frost. Take a side hill, with a southern slope—no matter if it is dry. I have observed this fact—that a grape-vine will endure about as much dry weather as any plant in the world. It will grow in sand that is very dry, and hold its vigor and its green foliage, and not wilt during the middle of the day when the sun plays down upon it. Hence I would recommend the selection of warm, dry soil. Do not make it too rich with manure. I think that land which will carry a good substantial crop of corn is rich enough for a crop of grapes.

Mr. BROWN. I want to say a word or two about peach trees. That interests me, because I think the peach is the best fruit that grows in this country, and I believe that it is considered the best fruit grown in New England, by common consent ; and it grieves me sorely that we cannot raise it abundantly in this State. However, I feel impressed with the conviction that we shall have a plentiful crop of peaches again. I have tried various ways of raising them. I have raised them in pots, and am doing it still. Very fine peaches can be raised in that way, but they require greater care than a common farmer, who is engrossed by his everyday duties about his farm, can bestow upon them. That the climate is not suitable for them we must all agree. Most of us get peaches, almost every year, from branches that lie on the ground and are covered with snow. Therefore the tree needs protection. Now how shall we get that protection ? A farmer living in the town of Acton, three miles from here, in 1855 received \$350 net from two hundred peach trees on one acre of land. The trees were placed in a young apple orchard, between the apple trees, on land that is high, very stony and gravelly. Last year the crop was very light indeed. This year his peaches netted him \$400. One entire horseload that he took to town brought him nine dollars a bushel. I was up in New Hampshire in July and went into a peach orchard of eight hundred trees. The trees were about twenty feet apart

each way, and there was not a tree in the whole eight hundred, as the man told me—and I went through the orchard in every direction and think he was correct—that did not have some peaches on it, and most of them had a great many. As he went along he would pull them off and throw them on the ground, without paying much attention where he took them from. Said I, “What makes this success? I do not understand it. Here you are thirty miles north of where I live, and you frequently get good crops of peaches. How is it?” Said he, “That is the question almost everybody asks me when they come into this orchard. I can see only one thing;” and he pointed to the mulching which I saw round those trees. They were about eight feet high, and so level that you could look across the tops of the trees. They were almost as level as a floor, he takes such pains to head them in. The branches were eighteen inches long, but the peaches were up next to the stem of the tree. He cuts out the middle shoot, and lets the two side shoots go ahead. He keeps the whole tree headed in, and the top twigs come down within eight inches of the ground. I have not heard from him since, as to how the crop came out, but it looked then as if it would be very good.

This discussion has taken a very wide range, and we have had a great many pleasant theories and statements that are interesting and worthy of remembrance by all of us who mean to engage in the cultivation of fruit. But it seems to me what we want is some facts to show how we can obtain fruit under present circumstances. Is it possible for us to obtain fruit, even though circumstances are against us as much as they are here. I believe it is. Nature is very prolific indeed. The first effort of the vegetable kingdom seems to be to propagate itself. So it is with the animal kingdom. A single plant will produce enough to seed a whole acre. So you see what efforts nature makes to be sure the plant shall not go out of existence. The moment we prune a tree, we make an artificial thing; it is no longer a natural thing. Then it comes under the care of man, and he must deal with it in a manner entirely different from the way in which he would deal with a tree in its natural condition. What shall we do when we have an apple tree? The apple tree grows profusely; it fills up its head, if we leave it a few years. Then we head it in. So with the grape. It

grows in the most rampant manner. We head it in, choke it. What else shall we do? When the fruit is set, you will find that it is impossible for the plant to perfect all of it. Then the next thing is, to go to work and thin out in the most liberal manner. Go to your grape-vine and reduce the number of bunches from one-half to three-quarters, and you will have grapes; I have no doubt of it whatever. So it is with pears. Let them remain as they set, and you have very rarely perfect fruit. They will not attain to their full size and flavor unless you relieve the tree of the burden that it has imposed upon itself. I think these are plain, practical, simple rules, which we can all adopt, and by following them, we can get fruit, even under all these disadvantageous circumstances.

Then, one word more. The common opinion is, that people cannot raise fruit under glass without great cost and care. I think that is a mistake. I do not think there is a farmer who has the skill to manage ordinary carpenter's tools who cannot put up a structure in which to raise Black Hamburgs at very little cost. The common expense has been ten dollars a running foot. There is no need of it. Go to work and lay out your ground; set standard posts that will be lasting, put in your sills and build your building with common unplanned boards, let them come together without matching, but close as they will in the state in which they come from the mill. Then you may nail laths across these boards, which will prevent currents of air from passing through. You have then got your outside. Then put on your roofing. There is no necessity that it should all be glass; the lower part may be all boarded. In that case, you would insert pretty large panes, which would be just as cheap in the long run, unless you broke one. There you have your building, which will answer all the purposes of a cold grapery. I think you can raise your Black Hamburgs there profusely, and scarcely ever fail of a crop, when you would be likely to fail in out-door culture. Why not try it? There is no better grape, take it all in all, than the Black Hamburg. The only drawback is in thinning it. When the berries are about the size of pease, then you must thin it, or you will utterly fail in your object. It is futile to think of getting a crop unless you thin it; say, if there are five berries, take out three. That is the only difficult operation in the whole

thing. That is a hard and painful job. It requires a slender pair of tweezers, because the bunches ought not to be bruised in the slightest degree. When you have done that, water your plants until about the first of June, and that is about all the work there is to be done. When it gets to be about the first of November, and the leaves are falling from the vine, then trim them, which is a simple thing. Cut off close the stems which bore fruit this year, and leave every other. Then paint them over with a paint made of soap and sulphur, lay them down, and cover them up with pine boughs. In that way you raise the best grapes in the country, at very little expense. You can raise peaches and grapes, if you will only assist nature a little in her efforts.

JAMES THOMPSON, of Nantucket. I will say a single word in confirmation of what the last speaker has said with reference to peaches. In the garden of the house next to mine, a peach tree came up; close to the house, blossomed and bore fruit once, and never bore any more. The old lady who is there alone in the house, shut a blind back against one of the branches, and it grew up behind the blind. It was not disturbed until the first of October, and then, when she shut the blind, that branch was found to be literally loaded with ripe fruit, as big as my fist, and delicious in quality. There was not a peach to be seen on any other part of the tree.

A MEMBER. I want to ask one question of a practical nature. Allusion has been made to the raising of peach trees in pots, to be sheltered in winter. I want to inquire what sort of shelter is necessary. Will sheltering these pots in a barn answer the purpose, or must they be carried into the cellar?

Mr. BROWN. I put mine in the barn cellar, where I keep my farming implements. Last spring, you never beheld a more beautiful sight than those peach trees were. They were as beautiful a bouquet as you ever saw in your life. I told the man to take them out at once, but unfortunately there came a nipping frost, which nearly ruined them all, for fruit.

A MEMBER. I have no doubt they would be sufficiently protected in the cellar, but what I ask is, would it answer to put them on the barn floor?

Mr. BROWN. I do not think it would. They need an even temperature.

A MEMBER. The simple inquiry is, the degree of protection that is needed; because, if the ordinary shelter of a barn or shed is sufficient, we can cultivate them easily; but if they have got to be carried into the cellar, where we have but little room, it would be a great deal of trouble.

Mr. MANNING. In Washington, I was told by Mr. Sanborn, that the only protection given to his peaches was by placing them under a shed.

Mr. CLEMENT. Mr. Wilson's peach orchard, in Jersey, is on very high land; it is my impression that there are mountains on the north and west from his orchard. It is not long since he had quite a large peach orchard; there came a cold spell one winter, when the ground was naked, and killed a large share of the trees at the root. I presume the root will not bear so many degrees of cold as the top will. They are quite sure to freeze to death if the mercury runs down to ten or fifteen degrees below zero, when the ground is naked. Once, Mr. Wilson mulched his trees, partly for the purpose of preventing freezing, and partly to save cultivation. Peach trees should be always on high ground—always. It is no sort of use to plant them in a valley.

P L O U G H I N G .

The question of Ploughing was then taken up, Mr. J. M. SMITH, of Sunderland, occupying the chair. The Chairman opened the discussion as follows:—

The subject of ploughing is an important branch of farming, and there has been, during my day, a diversity of opinion in regard to it. There are advocates of very deep ploughing, and deep ploughing, and others who advocate shallow ploughing, and there are also advocates of subsoil ploughing. It seems to me that there is room and opportunity for discussion and argument on either side. I have been inclined to the opinion that the advocacy of deep ploughing may have been carried too far by some individuals. It has been my experience, that unless heavy land, clayey land, is thoroughly drained, it is of no use to plough deep; but on land which is dryer and in a high state of cultivation, deep ploughing may be beneficial. I have, in my own short experience, come to the conclusion that I have

ploughed too deep, and I do not plough so deep as I did ten years ago.

I will throw out another idea, because I presume it will promote discussion. My land was alluvial and rather dry, and I know I have injured it by subsoiling. What is the proper depth of ploughing, then, is the question that would arise, and what are the benefits of subsoiling? I have heard my father tell how shallow a piece of land he owned was ploughed at one time, on which he planted Indian corn. It was turf land, and it was so shallow ploughed that but little loose dirt could be made, and the harrow went waupety-waupety, as we say. The result was a very heavy piece of Indian corn. I am inclined to believe from that, and from my own experience, that we ought not to plough very deeply for Indian corn as for some other crops.

I simply make these remarks to present some leading points of discussion. There is opportunity now for any gentleman to present his views.

Mr. BIRNIE. You say a piece of land was injured by subsoiling. What was the character of that land?

Mr. SMITH. I stated it was alluvial. It was clover land, and had been mown one season. I intended it for wheat. It was our common meadow land on Connecticut River. I ploughed it, and followed it with the subsoil plough, and the result was, it took several years and many loads of manure to bring that part of the land—one-half the piece—back into as good a state of cultivation as the other half, and into good crops.

Mr. BIRNIE. I do not understand still. Did you turn up the subsoil?

Mr. SMITH. No, sir, only to the bottom of the furrow.

Mr. BIRNIE. With a mould plough?

Mr. SMITH. Yes, sir. I have subsoiled on other pieces of land which were fallow, without any apparent result whatever.

Mr. BIRNIE. It was damaged by loosening the soil some inches below the furrow?

Mr. SMITH. That was all.

Mr. HUBBARD. That brings to my mind a remark that I made to a man that I hired. The first job I set him to do was to plough a certain field. I told him where to go, and he went out and ploughed the field, and I found he had ploughed it very deep—deeper than I had been in the habit of ploughing.

I was very much incensed, and told him that his first day's work had nearly ruined the field. The result was, I never had a better crop than I had that year.

We plough for two purposes. We plough to save a great deal of labor through the latter part of the year, in the first place. When the land is not properly ploughed during the early part of the year, of course there is a great amount of labor to be expended upon it during the season, to get it properly cultivated. There has been a great demand for improvement in ploughs, in order that the ground may be properly ploughed. I can recollect, that in ploughing green sward, with the old-fashioned plough, we had a vast amount of labor to do afterwards in order to cultivate the field, because it could not be properly turned over. But with the modern improvements, we can turn over our green sward in such a manner, that, so far as my experience goes, that kind of land requires less cultivation than any other. But one question that will arise in the minds of individuals is, at what time in the year is it most beneficial to plough the land. There is a diversity of opinion in regard to this. I have heard individuals say that they would not have land ploughed in the fall, for the reason, that when the ground is not covered with snow, a great deal of the soil is blown off. Now, I have found, in my experience, in the cultivation of certain crops, that the fall is the best time to plough the ground, especially if I put my manure on and plough it in; and for this reason: that if the manure is put on in the fall of the year, and the ground ploughed, I can work it much earlier in the spring. I think all will concede the fact, that the land, if it is heavy, clayey soil, can be worked much earlier in the spring by putting the manure on and ploughing it in in the fall. For raising cabbages, turnips and such crops, I have for several years adopted the plan of putting on the manure in the fall. I do not care how soon it is put on, after the crop is taken off. Spread it on and plough it in; and so far as my experience goes, I have got a better crop in that way than by allowing the land to remain until spring, and then putting the manure on and ploughing it in.

So far as ploughing for a crop is concerned, when we turn over green sward, for a crop, it is a question with many as to which is the better time to plough, in the fall or in the spring.

So far as my experience goes, I would rather plough it as late as I can in the spring. If I am going to raise a crop of potatoes, I let the land lie until I am nearly ready to plant. Then the grass roots get a little start, and if it is well turned over, I find less work in cultivating it, and I think I get a better crop than by ploughing at any other time of the year. That is because I do not break the turf. The land which I plough in the fall is land which I wish to cultivate by completely pulverizing the ground. I do not think there is any danger of our ploughing too much. We are in the habit, many of us, of ploughing only once, in the raising of our smaller grains, and formerly, I used to plough only once, but I now invariably plough twice. Ploughing the first time as early as I can, harrow the ground over, let it lie until it is in a suitable condition to put in the seed, and then plough the second time. There is one crop, wheat, that I think should be put in early, whether the ground is in good condition or not. If it is in condition so that we can possibly work it, I think the testimony of almost every individual is, that it is better to put in the wheat crop early. But that is a crop that is not raised to a very great extent. The question has been mooted here, whether we can raise it in Massachusetts. I think we can raise it in Massachusetts just as well as they can in other parts. As I have said, if we will give a little attention to it, and each farmer put in from one to three acres, we shall save a great amount of money that is expended for breadstuffs brought from the West. I hope and trust, that we shall give more attention to that subject than we have, and make the trial, and see if we cannot do more in the matter of raising wheat than we have heretofore.

Mr. CLEMENT. In connection with this matter of ploughing and subsoiling, I would like to remark, that some years ago one of my neighbors had a subsoil plough, and I thought I would try it on my own ground. I was then working a piece of sandy soil, and I subsoiled it as deep as I could. I saw no beneficial results arising from that, and I do not know that it could reasonably be expected from land of that character.

As has been previously remarked, I do not believe in ploughing heavy soil very deeply. I think, if you plough heavy soil deeply, and bury your manure deeply, and then plant corn upon the surface, you will scarcely perceive any benefit at all from it,

and you will lose the manure at the same time. I have tried planting corn on heavy soil, on a small scale, for use in the family. I did last year. Well, I had occasion to work that ground over, after taking the crop off, and I found that scarcely any of the roots penetrated three inches deep. You cannot make corn roots run down into cold soil ; it is not natural. I believe the corn will starve to death before it will go down any depth in search of food. Therefore I would not plough deeply at all on cold, undrained soil. My soil being of this rocky, sandy, character, I do not believe I could derive any benefit from subsoiling. I have no soil where there is clay. I do not know that there is a ton of clay on my ground anywhere ; I do not think there is. I am sorry there is not ; I should like it much if I had some clay that I could use on my sandy soil to improve it mechanically, and make it more retentive of moisture, and enable it to hold manures better. But there I am. Hence I have never used the subsoil plough but little, and those experiments which I made did not prove satisfactory, and I gave it up ; and the gentleman of whom I borrowed this plough has never used it much. I think it has lain in his tool-house some twelve years, and has not been used much, and probably never will be again. His soil is very much like mine.

I can see, that where a gentleman has a stiff, clayey subsoil, and not many rocks in it, so that he can put on a team and break up this hard substance beneath the surface, it will be an advantage ; but I cannot see that it will be any advantage to an ordinary soil, where there is none of this stiffness of subsoil.

Mr. BIRNIE. When I first began to farm it, I had an idea that deep ploughing was everything, and I made up my mind to put the plough right in ; but I confess I have modified my opinions very much by experience. I do not plough now over six inches deep. I am satisfied that the roots of the crops we cultivate come pretty near the surface. I want my manure just as near the surface as possible, and have it mix with the soil, after harrowing it or ploughing it in. I think, if you put manure on the surface and plough it in deep, it will never get to the crop. I have been most successful by putting the manure on the surface and ploughing it in very lightly. I have a subsoil plough that I used years ago, but I use it very seldom now, except for my root crops. I find it an excellent implement to be used in

that connection. I find that the mangold wurzel does not go very deep into the ground, and I do not plough over six inches deep for mangolds ; but after the land is marked out, I run my subsoil plough where I intend to plant my seed, and it loosens the ground. I run it between the rows, and I find it loosens up the soil very finely. That is the only use I make of the subsoil plough.

In relation to the season of ploughing, I like to plough in the fall, because it helps along the spring work.

A MEMBER. How deep do you run the subsoil plough ?

Mr. BIRNIE. I run it down to the bottom of the furrow—no deeper. It seems to raise the ground up—soften it. I turn over the ground just as early in the autumn as I can. If I cannot turn it over early, I prefer to let it lie until the next season and plough it as late as I can, when the grass has started. I prefer to get just as much growth to the roots of the grass as I can before it is turned over. I put oats in the ground as early as possible. I raise several acres of oats every year. I plough in the autumn, and then sow before the ground is dry enough to plough in the spring.

THOMAS W. WARD, of Shrewsbury. There are but very few farms in my neighborhood, that have cultivated fields upon them, that do not have more or less small stones—cobble stones—and they are a very great nuisance to the cultivator. Where fields were ploughed as our forefathers ploughed them, they became pretty much clear of these stones, so far as my observation has gone. That was the case on the farm where I lived, and our fields were generally in a very good condition, so far as these stones were concerned. I am on a farm that was cultivated by my father, and before him by his father, and it was owned by his father ; I am the fourth generation on the farm, and I well remember that in my father's lifetime he ploughed when it was convenient for him to plough. If it was convenient to plough in the fall, he would plough then ; if more convenient in the spring, he would plough then ; but he always ploughed. He didn't put his plough in very deep. He never wanted his grass land ploughed more than from four to five inches deep, and I do not know that he ever failed to get good crops—good crops of corn, and good crops of grass following the corn. Now the grass crop is a very important crop to all farmers ; it is one

they look at more than they do at the corn crop. We are all aware that grass does not root very deep, and, as has been remarked, corn does not root very deep. I think it does not root so deep as the potato. If I was going to plough deep for either crop, it would be for the potato. When I took the management of the farm, which was after my father's decease, the word among farmers was, "plough deep." Older men than myself said that; it was a story of their telling, and without their experience I thought it might do for me to follow their counsel, and I put in the plough deep. I did not stop at five, six or seven inches. Now what was the result? That ground had been cultivated year after year continually, and probably had not been ploughed more than five inches deep, and all the goodness that had been carried there, except what had been carried off in the crops, was near the surface; and when I put in the plough deep I turned that all under out of the way. What sort of a crop could I get from that subsoil? Where I ploughed in that way it spoiled my field for years. The next time I had to plough deep, so as to turn up what I had ploughed down; then I was pretty careful not to plough deep after that, but let my manure lie on the surface, and then I got good crops again. But that is not the end of it. In ploughing to this depth, I not only turned down to a considerable depth what was on top, but I turned up a great many cobble stones. I lost my crop by ploughing deep, and also made myself labor by turning up stones. Now where was the advantage? I consider that I sustained a very severe loss in that manner of ploughing. Since then I have not usually cared to exceed five inches, and get my manure worked in at that.

I have ploughed in the fall. I think much depends upon the ground you are to plough whether it is possible to plough in the fall. If you have a tough, hard piece of ground that you desire to break up, it is better to plough in the fall; the frost has considerable effect upon the hard soil, and I do not think there is any very great loss by the wind blowing off the surface soil. It will take away some, unless the ground is covered by snow, but I think the loss is not to be compared with the gain that you make in letting the frost operate in pulverizing it. I think there is great gain there. I think a light soil may as well be ploughed in the spring as in the fall, and I think it is quite

as good for the crop, especially if you are going to put in corn. I think the corn crop is quite as good upon a piece of ground turned over twice in the spring, as it will be upon a piece of ground turned over in the fall. But there is a great deal of advantage in fall ploughing. Our teams are generally then in full strength, and in much better condition to do this work than in the spring, when the warm weather is coming on. They have been in the barn all winter, and when you take them out to exercise them, it takes them a good while to get the use of their limbs and recover their wasted strength, and they feel this work much more in the spring than in the fall. Therefore, I think fall ploughing, where it can be done, is very much better than to let it alone until spring.

Mr. THOMPSON. I called up this subject to learn instead of to teach. When I was a boy, I carried on farming, and worked at it until I was seventeen years old, but it is but recently—within three or four years—that I have commenced handling the plough again, and I do not mean to handle it much myself now, but I like to know the best way that it should be handled, and the best season of the year to handle it, because it is the duty of the man who either holds or drives, to know all the minutiae of ploughing.

In my younger days, we ploughed, usually, quite early, and with the best ploughs we could get in those days, and along through my later life, up to within three or four years, I have read a great deal on ploughing, from every source that I could, and it has been “deep ploughing,” it has been “top dressing,” and it has been “get the manure down as deep as you can ; no fear but that it will come to the surface.” Now, it comes to about this : Every man should seek to know the capacities of his soil, and the requirements of the crop which he intends to put upon the piece of ground which he ploughs. My experience has been, in the last three years—and everything I do is a sort of experiment, because I look at the result of everything I do—the result of my observation and experience is, that if you have a pretty tough piece of land, your team, as the gentleman who spoke last said, is in good condition to turn over that tough piece of land in the fall, and I would turn it over as deep as six inches. Of course, on your tough piece of land, the soil is a little deeper than it is on a light piece of land ; therefore, I

would turn it six inches, and I am now working upon that principle. After the land is turned, and through the winter, the manure is to be applied to it, and there it lies, until the spring comes round, about the time when I want to plant the crops; then I usually turn the manure under three or four inches. That is, for my root crops, for spring wheat, for barley, and such crops, I should put the manure on in that way: We generally put our corn upon quite light land, because sandy land is worked much better than heavier lands, and the corn crop will do better there.

Now, this subject leads us to inquire what plough we had rather use. We must have a plough to plough with. I have tried a great number of ploughs, and I have watched the different ploughing exhibitions throughout the State for the last five years pretty carefully, to see the kinds of plough used, the manner of ploughing; and I have always noticed that a plough with a short mould-board, if the mould-board was very concave, and the land stiff and hard, would throw the top edge of the sward off before it was ready to leave the convexity of the mould-board. It will roll along, leaving a place where a horse would break his leg if he undertook to go crosswise of the piece, if he put his foot down into that deep hole. I saw the ploughs at the exhibition here this fall, and the Michigan seemed to work better than some others on hard soil; but our lands are light, sandy loams, and the Michigan would be of no use. If you put two or three inches of the surface down seven inches, you would never hear of it again. You have got to wait until you can make some new soil above before you can get a crop. Therefore, I do not like that. There was the Morse plough, which seemed to be just convex enough. From the time it lifted the sod, it continued to give it a regular curve until it turned bottom up. I obtained one, and tried it in competition with the Doe plough and the Universal plough. There were over twenty men in a lot where the sward had not been turned for the last six years, and the last time, or the time before the last that it was cultivated, it raised sixty-five or sixty-seven bushels of shelled corn to the acre, and it would cut three tons of hay to the acre. You can see that that must have been good soil, and therefore the sward quite deep, and full of twitch-grass. I had two horses, one four and a half years old.

I put that pair of horses on the ploughs alternately, and tested the ease of draft and the best turned furrow. I found my team would go twenty per cent. easier with the convex mould-board on the Morse plough than with either of the others, and turn just such a furrow as I wanted—wide enough at the bottom to enable any horse or ox to walk easily and freely. Down our way, we have an abundance of sea-weed, and we sometimes enrich our land by filling the whole furrow full. As the team goes along, two or three men can follow it and put in sea-weed enough to fill it full, and turn the next furrow on to it. I have seen land enriched in that way, so that it would bear any amount of crop that you had a mind to ask it to bear. Down in Fairhaven, I have seen very stony land reclaimed, with sea-weed. Therefore, we want a plough that will give a wide berth for the horse to travel in, in order to fill up with sea-weed. I would plough those lands about six inches deep usually. I would plough in the fall for root crops, and turn in the manure three or four inches in the spring. I should rather have it three than four—either with a cultivator or with a horse-hoe. Then, when you run your seed-sower, you have a well pulverized soil, and you have the manure in immediate contact with the seed, to give it a vigorous start, and your seed has an opportunity to come along in time to enable you to thin the plants and weed, before the weeds become so strong as to interfere with them.

M. F. WATKINS, of Hinsdale. I would inquire if the depth the furrow should not vary according to the soil?

MR. WARD. I believe I stated that in deep, heavy soil I would plough deeper than in light soil. It depends altogether, I think, or very much, on the nature of the soil whether your ploughing ought to be deep or shallow, or whether you should plough in the fall or spring.

A. P. SLADE, of Somerset. I feel interested in this subject, because I lost a crop of corn last year in consequence of making a mistake about ploughing. I will simply tell how it was done. I manured a piece of stubble ground very liberally, thinking I would produce a piece of corn that should be entitled to a premium, without letting any one know about it until I had raised it. I applied any quantity of the best manure. The land was ploughed in the fall. I sent my man to plough in the manure,

and he asked me how deep he should plough it. I told him just deep enough to cover the manure handsomely. I was very busy, but after a while I went to see how he was getting along, and found he was ploughing it just about eight inches deep. I planted the corn with poudrette in the hill. It came up very handsomely, and grew until the poudrette was exhausted, and then plodded along, as we might say, through the season. It never amounted to anything. I think I can account for it, for after I had made up my mind that my crop was lost, I studied into the matter. Knowing that it was a very wet season, I supposed that the roots of the corn had not penetrated the soil as deep as the manure was put. On examination, in company with a gentleman who was visiting me at the time, I found that the corn roots ran almost on the surface of the ground, and that it was a rare thing to find the fibres extending down more than two inches. This was rather an exception to the usual growth of corn roots, for I have known them to run down nine inches, and have known a heavy crop of corn raised where the manure was ploughed in nine inches deep; but owing to the character of the season, it being so very wet, the roots were encouraged to follow the surface, and the manure that I put on to get that crop of corn was lost. But I am in hopes to get a good crop of potatoes there another year.

I will just mention another incident that occurred last year. I purchased a new plough last spring, just as Mr. Thompson did. I used a conical plough, and when we were ploughing our onion bed, the plough was running so nicely that we ploughed it ten inches deep, where we usually plough only eight. It put in the manure very handsomely, but it turned up on the surface a sort of lifeless earth, that of course was a stranger there and never should have been brought there. And just to show that a certain theory in relation to the growth of onions is true, I will make this statement. It is well known among onion-raisers, that when they plant a piece of new ground, the onions the first year are very liable to have scullions, and that, the longer you continue to plant the same piece with the same crop, the more perfect will be the product. In consequence of ploughing this piece two inches deeper than it had been ploughed for the last six years, one-third of the onions were scullions. I have learned

from these facts that an onion bed should always be ploughed to a uniform depth.

On motion of Mr. CLEMENT, the Board adjourned, to meet again at 7 o'clock in the evening.

EVENING SESSION.

The Board met at the hour appointed, Captain MOORE, of Concord, occupying the chair, to listen to a lecture on

THE AGRICULTURAL FEATURES OF THE AMAZON.

BY PROFESSOR AGASSIZ.

*Gentlemen of the State Board of Agriculture, Ladies and Gentlemen,—*We meet here to exchange our experiences, and it has lately been my good fortune to visit scenes which are not very familiar, and an account of which I have supposed might not be unwelcome on this occasion. Moreover, an event has taken place within three months which will have a decided influence upon the progress of industry and commerce, and it is connected with the scenes to which I shall allude. Therefore, of that event and its influence upon the progress of agriculture I propose to speak to-night. •

On the 7th of September last the Amazon was opened to the commerce of the world. It is an event of great importance, and yet it has passed almost unnoticed. Its importance arises from the fact that an immense extent of territory is now open to traffic, which thus far has benefited not even the natives. And yet that region is fertile beyond description. It produces articles of consumption of various kinds which are in extensive demand, and upon which, in short, depend the progress of industry. I will only mention one. India rubber is one of the natural products of the valley of the Amazon; and where would many branches of human industry be now if India rubber could not be procured, and where would much of the progress which we anticipate in the future be, if the supply of that article was not daily increasing? Therefore, you perceive, how desirable it must be that we should know something of the growth and production of India rubber, and that we should know exactly how far that article may be produced in the quantity needed by the progress of our daily avocations. I have seen the plant grow-

ing ; I have seen the harvest gathering ; I have seen the way in which it is stored ; and I propose to say something to you of that and of other branches of tropical agriculture.

One word, in the first place, on the country itself, for if it was a dangerous land to visit, if it was so sickly that to travel there would be the death of a man from the North, it would be hardly desirable that such a land should be thrown open to free intercourse with all nations. But there never was a country which had a bad repute which deserved it less. The idea generally is, that the valley of the Amazon is a malarious land, pestilential, almost intolerable on account of the insects and poisonous reptiles, and dangerous on account of the wild population. It is not so. Though under the equator, the valley of the Amazon stretches, parallel to the equator, extending a few degrees to the north and a few degrees to the south of the equator, but mainly under the equator—from the foot of the Andes to the Atlantic Ocean, in a straight line of over two thousand miles, and over a width varying from five hundred to seven hundred miles. We should expect, under such circumstances, an exceedingly hot climate. Let me say, that the climate is more temperate than New England. There are no winters such as we have ; I saw no such hot days as we have. Our New England climate is what the natural philosophers call “an excessive climate ;” that is, a climate in which the temperature of winter sinks as low as anywhere, and in which the summer heat rises as high as anywhere ; the consequence of which is, an average temperature which passes for temperate, because the extremes are so far apart that when combined, the result is a moderate average. On the Amazon, it is very different. The highest temperature experienced there is 90° or 91° Fahrenheit. I have been told that the thermometer has shown 91° only once in ten years. I have observed the thermometer myself daily during eight months, and I never saw it rise to 90°. It never falls below 77° or 78°. You see the range is very small. You would therefore expect that the temperature would be very uniform, very monotonous. But there is another circumstance which modifies that in a remarkable degree. The Amazon, emptying into the Atlantic under the equator, faces the trade-winds. The trade-winds blow over the Atlantic for its whole width, and sweep over the valley of the Amazon, from

Para, at the mouth of the Amazon, to the foot of the Andes. The natural consequence is, that there is an enormous evaporation, daily, from that extensive water surface, which produces such a cooling of the water, that in many places, when bathing, I have found it rather cold. And the natural consequence is, that while, during mid-day, when the sun is high, the temperature is very high, the sea-breeze tempers the heat constantly, and when the sun is under, there is a succession of reductions of temperature, which makes the nights cool. In the valley of the Amazon, though under the equator, we have a regular alternation of not over one day's heat, with cool nights. Such a delicious climate, I believe, exists nowhere else on earth. The natural consequence of these physical conditions is, that the fertility of the land is unbounded.

Now, you may ask, how is it, then, that the Amazon has such a bad reputation?—that all travellers who visit those countries speak of malarious diseases, speak of intermittent fevers as reaching everywhere, speak of a population who look like skeletons, in consequence of their exhaustion by the climate? There is a great deal of truth in the statement, that these things occur there, but they are not the consequence of the climate; they are the natural consequence of the mode of life of the natives. There are frequent rains, and these rains are very agreeable; I can say there is nothing more agreeable than to receive a shower in the open air; it is a natural mode of bathing, and the inhabitants go and take their bath in the shower, every day, but instead of changing their clothes, they allow them to dry on their bodies. They will do that twice or three times a day, without taking any precaution to keep dry, and in those alternations between dryness and moisture, even though the climate is fine, you see at once there must be a predisposition towards fever; and if, in connection with that, the diet is insufficient, the population will be unhealthy. The indolent character of the population leads them to take very little care. They are not provident; they do not accumulate a sufficiency of wholesome food in the right season, and the natural consequence is, that in a land of plenty, where all the productions of nature that may be converted into food for man abound, the natives die literally of hunger, and you see starving populations everywhere. Of course, these results will not always be referred to

their true cause, and the natural consequence is, the bad reputation which that country has—which, moreover, is entertained by the officials of the country. The president of one of those provinces, sent out by the government at Rio, to administer justice, and to see to the interests of the country along the Amazon, is considered an exile, in an uncivilized part of the realm. He is desirous to go home as soon as possible, and it is for his interest to represent the country as unhealthy, that he may the sooner be greatly rewarded for his devotion. The natural consequence is, that all the officials of the provinces of the Amazon decry the country, and contribute to create and maintain at the capital of the empire, the impression that the valley of the Amazon is an unhealthy country.

I wanted this to be well understood, because I hope to see the day when our New England backwoodsmen will go to the Amazon and take advantage of the endless richness and value of the precious woods which grow there in the greatest profusion, and which are allowed to rot on the spot, without being of any use to anybody. All that is needed, in order to reap the benefit of this rich production of the valley of the Amazon, is to go there and take possession ; for those extensive forests are almost everywhere nobody's land, and might be taken possession of by any new-comer ; and I know it is the intention of the Brazilian government, as it is in accordance with their interest, to facilitate the settlement of that part of the country, and give every encouragement to the establishment of industrial occupations along the borders of these waters.

Now to travel there is as easy as can be. There are lines of steamers plying between the sea-coast and the foot of the Andes regularly. Twice a month there is a steamer from Para which goes into Peru ; and since I left that country the means of communication with several of the tributaries of the great river have been increased ; and every day, as commerce is developed, no doubt the communications will be multiplied. I trust it will not be long before small steamers will be run on all those great rivers. At present it is mainly on the main stream of the Amazon that the steamers run ; its tributaries have only been incidentally visited by steamers. Of the magnitude of these water communications it is impossible to form an idea without seeing them, they are on such a grand scale. I am afraid to

state my impressions, for fear of appearing to exaggerate; but I will give you some figures. The front of fresh water which pours into the Atlantic from the mouth of the Amazon is one hundred and fifty miles wide. This fresh water front is divided into two branches by an island, which is in the mouth of the Amazon, called the island of Marajo, which is half as large as Ireland. The opposite shores of the river above the island are so far apart that it is utterly impossible for the eye to see the two shores at once. You may ascend the Amazon a thousand miles before you have a plain view of both shores, with the exception of a single spot, at Obidos; yet the whole tract is so interspersed with islands that it gives the impression of an archipelago in a fresh water ocean; and when ascending the great river you seem constantly to be between shores, when in reality you sail between a succession of islands. The tributaries are on a scale of magnificence which compares with the main stream. The mouth of the Tocantins, (which is the first great tributary of the Amazon, on ascending from Para, on the south side,) is seventeen miles wide where it pours into the Amazon; and the Tocantins is not one of the larger tributaries of the Amazon. The Rio Purus, which empties into the Amazon over a thousand miles above its mouth, is navigable for steamers drawing twelve or fifteen feet, for a length of five hundred miles above its mouth. The Rio Madeira is another of those giants which may be compared only to the large rivers of the world, and is of the utmost international importance, since it will one of these days furnish a communication not only between the valley of the Amazon and the other parts of the Brazilian Empire, but be a highroad between the Southern Republics of South America and the more northern provinces; for through the Rio Madeira it is possible to establish a direct water communication with the Rio Paraguay, and through the Paraguay with the Parana; and therefore a river circuit might be made from Para, up the Amazon and the Madeira into the Paraguay, and down the Paraguay and Parana to Buenos Ayres, and back again. You see, then, what prospects there are for a country which has such a territory, and over which flow such rivers. And it is, perhaps, more than my words have impressed upon your minds, for we generally consider a river as a mass of water which flows between banks, is encased between these

banks, and has a definite course, beyond which you cannot pass. It is not so with the great South American river and its tributaries. The whole slope of the valley is so slight, that from the junction of the Rio Negro to Para, a distance of some fifteen hundred miles, the slope is only two hundred and odd feet ; and therefore the whole course of the Amazon is, properly speaking, an extensive plain, over which flows an immense sheet of water, which covers an extensive tract of ground. That water has an annual rise and fall of from thirty to thirty-five, and even forty, feet ; and on the southern and northern sides of the main river the rise does not take place at the same season. It is in September and October that the southern tributaries of the Amazon swell ; their increase of water pours into the Amazon in November and December ; so that there comes a flood from the south side of the Amazon during the autumnal months, which spreads over the whole of that part of the country, and presses the waters of the north side further north and encroaches upon them regularly. In the early spring—in January and February, and even in March—the northern tributaries swell, and press back the waters towards the southern side of the valley ; so that the whole is, as it were, like a sheet of water which, in the main, flows eastward, but swinging to the north and to the south alternately, establishing cross communications between all the watercourses to such an extent that it is possible to come down from the Upper Amazon to the neighborhood of Para without ever entering into the main course of the Amazon, on the south side as well as the north side ; and these channels are navigable at all seasons. Therefore there is over this immense plain a network of roads established by nature, which forever will be maintained in running order, without any expense whatever to the country. All that is needed to get the advantage of that immense fertility all over the country is to put on steam vessels that may be adequate to the work to be done in the different parts of the valley.

Imagine what facilities there must be ; and yet, in the whole of that country, at this moment, there are not more than 250,000 inhabitants. It is a vast desert, unoccupied, the natural products of which rot on the ground, from want of hands to collect the crop. And that crop is of immense value, and is as varied as you can well imagine. I have been told by gentle-

men who have lived many years on the borders of the Amazon, that of India rubber alone, not one-tenth was gathered, from want of hands to pick it up at the proper season. And so it is with all the other products. The mode of gathering is even more astonishing. The trees are destroyed for the small fruit. There are no saw-mills in that country, and when the people want to build, they cut down just the most beautiful tree, and shape to the dimensions of the piece of wood they want, with a hatchet. And these woods—what are they? They are the most exquisite in grain, the most admirable in color and in variety, and the most precious for all possible cabinet work, and for constructions of all kinds; woods as hard and as durable as grow anywhere in the world, and which, I say, are not even used in the country itself, and form no part whatsoever of the exports of the country. It is this rambling, careless, indolent population to which I have already alluded, which at certain seasons wanders through the woods and gathers the harvests. It is in that irregular manner that all the products of the Amazon are collected—the sarsaparilla, the caoutchouc or India rubber, the Brazilian nuts, and the hosts of fruits and of fishes, which are used only to a very limited extent, but which are already in some use for various manufactures, either in the small towns along the Amazon, or at Para.

In conversation with intelligent inhabitants, I have ascertained that the planting of the India rubber tree, for instance, would yield immeasurably larger returns than those which the gathering of the natural product has thus far secured; and everywhere would these plantations be as easy as possible. Life is so easy there—hardly shelter needed to be comfortable—the variety of natural products through which life may be sustained grow so profusely, that between fruits and grain and fish and game and wild fowl, there is only a selection needed in order to sustain an extensive population; and I suppose that the only reason why the country has not increased largely in population is, because of the fact, that until recently, it has been shut against intercourse with foreign nations; but the great fact to which I have alluded, which took place on the 7th of September last, has laid the whole open, and according to the laws of the land, the settlement of foreigners in Brazil is made

so easy that I trust the riches of that country will not be left ungathered by our active and enterprising population.

Having said thus much of the general productiveness of the country, I suppose it will not be out of place if I allude to some of the products themselves. The family of plants most extensively growing there, and from which the largest variety of products is obtained, is the palm. There is an endless variety of them, and the articles which are furnished by each one are numerous also. But before I proceed to that, let me give you some idea of the character of the river communications of the Amazon.

Here we have the course of the Amazon [representing it on blackboard.] Near Para, we have two great branches, which surround the island of Marajo, and here comes the Tocantins, which descends from the table land of Brazil, and pours into that southern branch of the Amazon. The Araguay comes next; it does not come as a body in the Amazon, but sends off branches which pass into the Rio Tocantins, before it has reached the Amazon, and so that inter-communications are established of which I spoke before. And here comes the Tapajoz, uniting with the Amazon at the place where stands the city of Santarem. That, too, sends off branches, and these, again, establish inter-communication with the Amazon itself; so that you have a network of rivers communicating with one another over a width of at least sixty, eighty, one hundred, and one hundred and twenty miles; and that constitutes, properly, the bottom of the river system. Higher up, these inter-communicating branches are not so numerous. But let me go one step further. Here is the Madeira. Now, the Madeira sends off a branch which comes to unite with the Tapajoz, receiving itself a number of large streams. The Rio Andira, which empties into this branch of the Amazon's stream, is, at the point of its junction, ten miles in width. Thus one branch of a branch of the Amazon is, where it pours into the Rio Madeira, ten miles in width, at the time when the river is full. This land here [representing an island,] is known as the island of Tupinambaranas, and it is a network of islands and lakes which is very striking. Now, I come to the Manhes, which is a lake here. Then here is another river, the Rio Negro, one of the great rivers which comes from the table land of Guiana, which has

another branch here, the Rio Parana. We came down the Amazon to the island of Tupinambaranas, on a government war steamer. These waters had never been navigated by a steamship, and the question was how far it was possible to navigate them; but the captain, judging from the general system of inter-ramification of these rivers, had no hesitation in putting into this network of rivers, passing across the island of Tupinambaranas, reaching the river Ramos, ascending the river Manhes, and landing us at the town of Manhes, after a navigation of over one hundred and twenty miles, through regions which have not been explored, which have not yet been sounded. They go there with their steamers as they go into the open ocean, so much has the whole of this valley the character of an open sea, interspersed with islands.

Now here is another river, the Trombetas, which joins the Amazon near the city of Obidos—a river, the name of which, probably, has hardly been heard in New England, but which is navigable by the largest steamers; and higher up there are similar branches, extending in the same direction, with extensive courses, which enable one to come down from the Rio Negro to the Trombetas without entering into what may be considered as the main valley. Now, to give an idea of the dimensions of this network of rivers, I will say that it covers a surface of from one hundred and twenty to one hundred and sixty miles in width. But that is not the only characteristic of these singular watercourses. The main river sends branches to its tributaries; and no better proof can be given of the slight difference in level which exists between them. After ascending all day, by steam, the Rio Negro, above its junction with the Amazon, we came upon a branch coming from the Amazon itself. See how that could be ascertained without a survey. The Rio Negro is a black water river—that is, a river carrying clear water, darkly colored by the decomposition of vegetation, and not flowing through muddy banks, and therefore in no way turbid—carrying no whitish deposits; while the Amazon itself—the main stream—and the Rio Madeira and some others, carry an immense quantity of mud, and the water is turbid, whitish—so much so that you perceive the Amazon over a hundred miles at sea before you enter its mouth. Now, after travelling a day up the Rio Negro, suddenly we saw a large stream of whitish water

emptying into it, and, on inquiry, we were told by the pilot, who was familiar with that region, that it was a branch of the Amazon which poured into the Rio Negro, which Rio Negro is itself a tributary of the Amazon. And higher up you have the same phenomenon repeated in the Japura, which sends branches into this network to which I have referred, but which, higher up, receives its branches from the Amazon. Therefore these tributaries of the river, near their junction, are so nearly level with the general surface of the whole land, that while they pour the bulk of their water into the main river, they receive branches from the main river; and this especially at the time when the rise of the mass of the waters alternates from the south to the north.

I will now, as I have this diagram before me, just recall what I said concerning the alternate rise and fall of the waters. From September to December all the tributaries of the Amazon which are on its southern side rise gradually. By December this flood has reached the axis of the valley, and pushed to the north all the water from those northern tributaries, which at that time are at their lowest. In the latter part of January and in February and March, all these northern streams swell and rise, and press against the southern rivers, which by that time have emptied the bulk of their waters into the Amazon, and so the northern waters are now pressing south. And it is this swinging of the great mass of waters right and left, (this is, north and south,) while it flows east, which has established all this network of inter-communications which is the characteristic feature of the Amazon, and in which that river differs from all other rivers known.

The first indication of this singular and striking system was obtained when Humboldt visited South America, when from the waters of the Orinoco he passed, without interruption, into the waters of the Rio Negro. There is a stream known as the Cassiquiare, which, after flowing from the east westwards, divides into two branches, one of which flows northwards and empties into the Orinoco, while the other flows southwards and empties into the Rio Negro. Now Humboldt ascended the Orinoco to the point where it receives the north branch of the Cassiquiare, and, ascending that north branch, passed into the south branch, and thus reached the Rio Negro without interruption. Now

such communications, which, when first mentioned, we hardly believe to exist, form the character of the whole river system which we know by the name of the Amazon. And it is not a particular feature, only to be found in the connection of the Rio Negro with the Oronoco through the Cassiquiare, but it is a general fact ; it is the character of the inter-communications of this great river system. All the water from the tributaries of the Amazon, passing from so low a level, covers such an extensive tract, that as the water rises or falls, the main river sends branches into its tributaries, as the tributaries send their water into the main stream.

It requires hardly a further illustration to show how easy must be the communications in that country ; but it is to be forever a water communication. There are such small tracts of continuous land above the water through the whole year, that railroads will forever be out of the question in that country ; and even common roads cannot be used there for extensive travel. The land is generally low. That is one of the peculiar characteristics of the whole country—even and low. Where the banks of the river are most abrupt, where the river has cut new channels, and where, in consequence of these erosions, masses of land have fallen in and formed steep banks, they rise hardly more than thirty or forty feet, at most sixty feet, above the level of the river anywhere. It is probably the most extensive and most even plain in the world, unless the great desert of Africa has as extensive and flat a surface as the valley of the Amazon.

Geologically speaking, it is the most curious country known to science. The whole of that land consists of materials ground and carried along by the same cause which has accumulated our drift. It is drift, and the similarity to our drift is most striking. All these drift-beds which cover New England, and which form such a rich soil after the large masses of pebbles have been taken out from it—rich because it is the result of the attrition of the most diversified rocks—all that drift is of the same character as the materials which form these Amazonian plains ; and you see at once what singular vistas it opens into the past when we consider the probable causes or forces which have ground these materials to their present condition ; for if our drift has been ground by glaciers, the drift of the Amazon is so like the

drift of the North, that there is no escape from the conclusion that even these tropical regions were once under the ice sheet. But I will not here dwell upon a topic which is foreign to the subject on which I desired to speak, but only state that there is this remarkable resemblance between the loose soil of the North and the loose soil of the tropics; and whatever may have been the plough which has ground our rock to make it fertile soil for man to dwell upon, that same agency has been at work upon the plains of the valley of the Amazon, and has produced the same results. Everywhere it is drift which is the most fertile soil all over the surface of the earth.

There is only one tract of land which has hills of some striking dimensions, and that is between the mouth of the Xingu and the mouth of the Rio Trombetas. On the north side especially, there are remarkable hills, and on the southern side somewhat lower ones, but equally striking in appearance. These hills are particularly impressive because of their form. All mountain ranges everywhere have undulating crests, have inequalities on their summits, and changes in their direction; but these hills of Obidos and Almeirim are flat-topped, with sides as even as the gable of a house; and these flat-topped mountains extend considerable distance. They were for some time supposed to be spurs of the table land of Guiana, or the table land of Brazil, and had never been accurately measured. It was during my journey that, for the first time, I suppose, the means for measuring them were brought to their summits, and we ascertained that they are much lower than they appear. The impression is, when looking at those mountains from the centre of the river, that they are many thousand feet high; they stand so abruptly, that the eye is deceived, and the impression is so grand that you might suppose that there was a very high mountain range rising on the borders of the horizon. But when actually measured, they were found not to be above nine hundred feet high. It is very curious how the eye, in attempting to measure dimensions on so large a scale, is deceived. It would at first appear, that owing to the very extensive plains, high mountains might produce the impression of low hills. There it is exactly the reverse. Hills not reaching a thousand feet in height, make an impression as great as that of the Alps. The scenery, in fact, recalled to my mind the familiar views of

the Alps, in Switzerland, the lower hill on the opposite side reminding me of the Jura.

Now, in those hilly regions, there are extensive grazing grounds, and very large herds might be raised there. It will one of these days be the pastoral district of the Amazon, and there will be, probably, the rural district of the country, when the raising of cattle has become a regular occupation. At Ereré, a little village among those hills, I have tasted mutton as good as I ever tasted in New England, showing that the quality of the grass is favorable to the raising of animals; and that region, owing to its hilly character, is so temperate that it would form a most desirable place for agricultural settlements.

You know the Brazilian nuts which come to us from that country. They grow on one of the most majestic trees known in creation. The tree which bears the Brazilian nut is one of the giants of the vegetable kingdom. It belongs to the myrtle family, and its appearance is very peculiar. It grows like a large, closely formed pyramid, and towers above all the other trees of the forest. That and the Sumanmeira, form the two choicest trees in the Amazonian region, and are the trees which give character to the forest and the landscape. The Sumanmeira, which is a kind of mallow, rises above the forest in the shape of a tall stem, at the height of eighty and more feet, frequently having a diameter of ten or twelve feet, and its crown spreading like an umbrella over the forest; so that, from a distance, these flat-topped trees give one the impression of umbrellas in a crowd, on a rainy day, one spreading over the other. These trees give a peculiar character to a part of the forest, and between them, we have these close cones of dark green foliage, which are the Brazilian nut trees. There are no two trees so impressive as these. The Brazilian nut is a large nut, not unlike our ordinary walnut in external appearance, only the bark is somewhat smoother, about the size of your two fists, and containing some twenty or thirty or more nuts inside. Now, all the products of that tree which come into the market are merely the accidental gatherings from the ground. Hardly anywhere is the tree cultivated; it is only what is gathered by chance off the ground, which is brought to market. In two places only on the Amazon have I seen cultivated nut-trees, and these had been planted for ornament in front of houses.

A few words about palms may contribute to give you some idea of the peculiarity of the vegetation of those regions. Palms themselves differ from all other plants in their growth. The stem is regular, remarkably straight, and the leaves are generally in a tuft at the summit. That is the appearance of most palms. The leaves themselves exhibit two types—one in which the leaflets are of the same length, and spread like an open fan, and another in which the midrib is elongated, and in which the leaflets are placed right and left on the side of the midrib, like the barbules of a feather. These two types extend through the whole family of palms. There is no intermediate form; but the palms themselves differ from one another in their dimensions, in the combinations of their leaves, in their arrangement, in the character of the wood, in the character of the bark, in the height and shape of the tree, the appearance of the flower, in the appearance and size of the tree, and in the character of the fruit.

To give you some idea of the various kinds of these palms, I will describe some of them. The Miriti, for instance, which is one of those from which the largest number of useful materials is derived, is a palm, the stump of which is about the diameter of my body, and it shoots up straight to the height of fifteen, eighteen and twenty feet, and on the summit spreads the fan-like leaves, not very many in number, but of colossal dimensions. I was desirous, when I first saw that tree, to obtain a leaf, and I sent a man up the tree, with a hatchet, to bring me down one. He sat in the angle of one leaf, in which he was as secure as he would have been in the forked branch of an oak tree, and chopped away with his hatchet for many minutes before he had cut through the leaf-stock, which brought down a single leaf; and when that leaf was on the ground, it was hard work for a man to raise it. That is the kind of foliage which that particular species of palm produces; and it has bunches of fruit which are not unlike in their arrangement a bunch of grapes. I have plenty of these things at the Museum in Cambridge, but they are at present accessible only to myself and one or two persons at a time, because they are so crowded that there is no possibility of going between them; but one of these days, they will be visible to all. Now, one spike of the

fruit of this tree to which I have referred, is so large that it could hardly be laid on this desk. It has branchlets nearly two yards in length, and each one of these branchlets supports a nut about the size of a large egg ; and when in full bearing, one single bunch is so heavy that it is a good load for two men. I have one such bunch at the Museum, from which the fruit has dropped, it is true ; it is like a bunch of grapes, the berries of which have been taken off ; but the bunch itself is there to show the dimensions, and a barrel of fruit which was hung up on that bunch stands by its side.

Now this fruit contains an oil which is of great value ; it has a pulp which is very palatable ; it has a fibre which is invaluable for the manufacture of cordage ; and the wood itself is of very great durability and beauty, and may be used for a great variety of purposes. I am told by a friend from Brazil, who is just at this moment with me at Cambridge, and who was recently at the great Exposition at Paris, and saw there an exhibition of all the woods of Brazil, that nothing excited admiration and wonder so much as one dish, in which the different varieties of palm woods and their products were brought together. I have myself seen an exhibition at Para, in which the products of the Purrines were brought together, and where the palm and its various products formed the principal objects exhibited, and astonished me by their variety. I am told that the English have begun to appreciate the value of this palm fibre for cordage, and that at this moment an exportation of palm fibre has commenced for the manufacture of cables for the English navy. These fibres have one peculiar characteristic, which renders them of great value for such purposes : they are so light that the cables do not sink, but float. You see at once the importance of such a fibre—so strong as to be superior in tenacity to all other textile fabrics, and yet so light that it will not sink in water.

Now other palms have a totally different aspect. There is, for instance, the Little Marajah. It is a palm only six, eight or ten feet high, a stem not thicker than my thumb, growing in marshy ground and rising like water-bushes from the water, and coming to be about two feet above the level of the water when the fruit is ripe, throwing out bunches of flowers and then bunches of fruit, which, when ripe, are so like our Black Ham-

burg grapes that they are served after dinner on the table in the place of grapes. And their taste is as diversified as possible—far more so than are the different varieties of grapes. Some of these bunches are purplish in color, some are sweet to the taste, and some have an aromatic flavor besides, and indeed a variety which is quite surprising; while others are farinaceous, and really remind us of the different kinds of nuts which we use for the table; and in addition to that they have a fleshy envelope, which gives an appearance to the fruit exactly like that of a fine peach. There is one kind of palm, known under the name of Pupunha, which the English of Guiana have called the peach palm, which produces bunches of fruit about a foot and a half in length, each bunch containing from thirty to fifty fruits, and each fruit about the size of an ordinary peach, delicious to the palate—a singular combination of the sweet and mealy taste—which is capable of being prepared in various forms. They are eaten whole, they are eaten cooked; they are prepared in various forms, and they make a most exquisitely transparent and aromatic oil.

While these palms are so striking, some of them, for their regularity of form, there are others which constitute vines, creeping like our smilax among the bushes, and extending for a great length in that way, while the stem is hardly thicker than the little finger, and so flexible and so durable that in most constructions the Indians use them in the place of cordage. They use these slender stems of palms as we use rope, and they may be applied for all similar purposes to great advantage. It is of them, also, that they make a variety of tissues, and it is of the more pliable and finer fibres that they weave their hammocks and the different fabrics which they wear. So that the palm supplies the native Indians, the inhabitants of those forests, with everything. It gives him the rafters for his house, the wood for his canoe, the fibre for all the uses to which he is capable of applying it; it gives him the various articles of food he wants; it gives him the means of covering himself; and many of them furnish in addition a kind of wax, of great excellence, which, if introduced into our commerce, would be of great value for the manufacture of candles and the like.

I know of nothing that is more attractive than this family of palms and the great variety of their products; and I believe it

would be worth while for one who is familiar with the various branches of industry which would be benefited by a new supply of materials, to visit that country and examine its resources from an industrial point of view. All I have told you of these things, I have gathered incidentally. It was not the object of my journey. I observed these things when I had nothing else to do ; or rather, as I could not help seeing them while I was doing other things. I have no doubt that any one who would go there for the purpose of ascertaining what are the various useful materials which might be gathered there, what are the places where the gathering might be done to the greatest advantage, what are the places where settlements could be made which would be most appropriate for the objects in view, would render an immense service to our community. For these things are used ; we receive them only accidentally, as it were, because they have never been regularly cultivated, and because the supply which comes to us is one which cannot be regularly depended upon. As soon as cultivation should replace this accidental gathering—as soon as the endless variety of products to which I have not even made an allusion should be brought into the market—I have no doubt that the valley of the Amazon would be one of great interest to us. Remember, that it will be more advantageous for our northern population to go there to gather this wealth than to any other parts of the tropical region, on account of its proximity, to begin with, and on account of the character of the climate. In eleven days from New York you can be in Para ; in a fortnight after leaving New York you can be at the junction of the Rio Negro with the Amazon, a thousand miles above the mouth of the Amazon ; so that it is at our door, and the facilities of communication are so great, that we should take advantage of this source of valuable traffic, now that it is thrown open to all nations, before others have taken the cream from the field. And it is because I see the immense advantages to be derived from this opportunity that I have ventured to introduce here a subject so foreign, on the whole, to the regular occupations of the members of this Board.

Let me only add, that besides the articles to which I have alluded, there is a variety of dyestuffs as great as the various kinds of wood of which I have spoken. There is a variety of

most delicious fruits, also, which are never exported to our markets, but which might be sold here regularly. Instead of those diminutive, insipid pine-apples, which we get from the West Indies, we might have those magnificent fruits which grow in the valley of the Amazon, which are pine-apples on a gigantic scale; so sweet, that sugar would only spoil them; so fragrant that they exceed all that is known among fruits; and they can be easily brought to us. When I left Para, I bought one of these fruits for two cents, and brought it with me to Cambridge. It was seen in New York by some of my friends, who said they would give twenty or a hundred dollars to be able to present on festive occasions such a fruit upon their tables. Now, that fruit can be bought for two cents apiece at Para, and can be brought to our market with the greatest ease, for I have done it myself. And what is true of fruits, what is true of dyestuffs, is equally true of a variety of oils which all these plants produce, and which would probably supply a great deficiency in many articles of manufacture.

But I will not trespass upon your time any longer. I thank you for your attention.

Dr. LORING moved that the thanks of the Board be presented to Prof. Agassiz for his able and interesting lecture, which motion was carried, and the Board adjourned.

THIRD DAY—MORNING SESSION.

The Board met at 9 o'clock, Mr. ALEXANDER HYDE, of Lee, in the chair.

Before resuming the consideration of the subject of ploughing, some discussion took place with reference to the appointment of a chairman for a year, instead of a day, and also as to the propriety of limiting the time to be occupied by the speakers, which terminated by the adoption of a motion, submitted by Mr. George A. King, of Barnstable, that the general subject be committed to the committee appointed last year, and that they be requested to report upon the subject the first day of the meeting in January.

On motion of Mr. Porter, Mr. King was added to the committee.

On motion of Mr. Slade, it was voted, that at the close of the afternoon session, the meeting adjourn *sine die*.

The Board then resumed the discussion of the subject under consideration at the adjournment last evening, that of Ploughing.

Mr. WARD, of Shrewsbury. I find that I was grossly misunderstood in some remarks that I made yesterday. I find, too, that I do not use the same dictionary as some other people. For instance ; in conversation with a member of the Board, in relation to certain ground, he said to me, that in his vicinity, they were ploughing up their meadows. That was the idea he conveyed—perhaps not the precise language. Now, in my neighborhood, where I was born and brought up, we call no grounds meadows, but wet land. In certain other localities in the State, all grounds that are mown are called meadows. In the few remarks that I made yesterday on the subject of ploughing, I spoke of ploughing light soil, and said I would plough it shallow. Now, by light soil there, I intended to be understood as referring to soil that is gravelly, and has but very little surface soil ; and by heavy ground, I meant to be understood as referring to clayey subsoil. I find that the remarks I made were not in exact accordance with the views of some members of the Board, who understand light soil to be sandy soil, and that that soil should be ploughed deep. I desired to make this explanation, in order that, if there be any record made of what was said, there may be a perfect understanding. I think that every man who holds the plough, or who controls the plough, must be the judge of his own soil. We cannot lay down any definite rule that will precisely apply to every locality, and every farmer must be the judge of his own soil, and of the necessity of ploughing deep or shallow.

Mr. CLEMENT. I think it exceedingly desirable that our discussions should be distinctly understood by ourselves, at least, and that they should be so conducted that the thousands who are to read them hereafter may really know what we mean by them. It seems to me that when we discuss any particular matter, it ought to be presented in such a way that it shall go out in a form implying a recommendation (if not directly recommending,) of some particular mode or system that may be adopted ; although I am perfectly aware that it is altogether

out of the question for us to recommend any particular rule to be applied to ploughing throughout the State generally. As Mr. Ward has said, a man must be his own judge ; and a man who cultivates the soil ought to have a good share of practical common sense, which will enable him to judge how deep to plough, and whether it is best to subsoil. I do not think it would be wise for this Board to say anything which would look like a condemnation of subsoiling, *in toto* ; for I suppose every one of us can imagine soils which would be benefited by subsoiling ; and, on the other hand, all of us would have no difficulty in seeing that there are soils which cannot be benefited by subsoiling—it would be labor wasted ; and a great proportion of the soil of this State is of such a character that it cannot be benefited by subsoiling. And while this matter is being discussed, I would like to have something go from the Board which shall look like a sort of recommendation that certain soils be subsoiled, and certain other soils not, so that, in reading our discussions, those who did not hear them, and were not able to listen to the minute explanations which we make, shall gain some light thereby. For the reports, which used to be little used years ago, are now sought for with avidity. I think it is very important that we should endeavor to make them instructive and interesting, so that any one who comes here shall be improved by what has been said. As was said last year, we all want to improve from year to year, to grow more intelligent from day to day, and be gathering new facts all the time. I am sure that is my desire, and if I did not feel so, I would not hold a place on this Board, because I have plenty of business at home to engross all my care and attention ; but I desire to learn from what is said by others in these debates, and from what is read here, in the shape of essays, and I desire to take part in discussions. We are so constituted that all these things, I trust, operate beneficially upon each and every one of us.

But I have wandered away from the question of ploughing. My own view of ploughing is this : that on our light, sandy soil we want to plough pretty deep, in order to extend the influences of air and moisture through the open, porous subsoil. The roots of all plants will run deep in such soil. If you will raise the turf carefully, where a piece of such land has been in grass

for a few years, you will see that the grass roots extend very deep in all dry soil, where they go for moisture, and for nourishment aside from moisture. Then, again, on hard, stiff soil, where the subsoil is gravelly and coarse, and not worth bringing up for the sake of improving it, I should plough shallow.

Then, in regard to the burying of manure, I do not know that it is very material to cover the manure deep in sandy soil, or otherwise; but it should be covered. I am in the habit sometimes of planting what we call pine plains. The soil is very light and porous; we can hoe the corn immediately after a shower and there is no sticking of the soil to the hoe. It is mere boy's play to take care of the crop on such soil. It is true the fertilizing properties of manures are soon exhausted on such soil.

Mr. BIRNIE. Do you plough deep or shallow?

Mr. CLEMENT. We plough deep, because if we did not, the leaves would roll in a fortnight. I have never perceived that corn was very much injured by rolling a little, if it did not get so dry that it did not unroll in the night; but if you find the leaves rolled in the morning, after having had the dew upon them, you may depend upon it, it has suffered. Now, if you plough the soil deep, and plough in the manure deep, the moisture is retained longer, and the crop seldom suffers.

A MEMBER. How deep do you plough?

Mr. CLEMENT. Seven or eight inches. We generally plough in the manure, and we get the benefit of it the first year. If we plough in fresh manure, even, from the stable, the next spring, if we plough again and sow grain broadcast, we scarcely see anything of the manure; it has rotted and gone into a soluble state, and the bulk of it has been taken up. At any rate, it seems to have been diffused into the soil and taken up by the crop, even if buried deeply. If you should plough that depth in heavy, clammy, tenacious soil, you would scarcely receive any benefit from the manure—it would be lost. Then there are medium soils—soils which are moderately wet—which I think it will do to manure pretty deeply—what we would regard as an ordinary good corn soil. We know that a heavy soil is not appropriate for corn. As I remarked yesterday, corn will not penetrate to cold earth; it is against the nature of the plant altogether.

These are the rules by which we are governed in ploughing in our locality. Light soil we plough pretty deep, and more shallow as it approaches a heavy, tenacious soil, unless there is something in the subsoil which leads us to think the land will be improved by subsoiling or turning up something more. But in our locality the soils are of such a nature that the subsoil does not seem to be much. We do not have clay. There is scarcely a farm in our locality where there is any clay perceptible. In some places there is just enough to show itself, if you stir a little puddle, by whitening the water, but not enough to improve the soil materially.

Now, whatever may be said hereafter in relation to this subject, I hope we shall be able to agree upon something, so that, as I remarked before, those who read these discussions, shall obtain some information from the remarks that are made here.

Mr. COLE. The whole tenor of the remarks made here yesterday, was to the effect that shallow ploughing was best; and the remark of Mr. Ward, that he ploughed from four to six inches, was contrary to the idea of deep ploughing; and I would like to ask him if his results would not have been more satisfactory if, instead of ploughing up four or five inches of soil that had been turned up before, he had brought up, at each ploughing, an inch or two of the soil below? When I was a boy, my father ploughed shallow. I have seen furrows ploughed upon our farm not exceeding three inches; as Mr. Smith said yesterday, it made the harrow fly round pretty lively. My father came to the conclusion that it might be improved by deeper ploughing, and at each breaking up it was ploughed a little deeper; and where it was then sandy soil we now get good crops of hay and fair crops of corn. We plough it now six or seven inches. I have now another piece of stronger soil, very stony, (the first piece to which I referred is free from stones,) which I ploughed with three horses as deep as I could. I ploughed it, I think, about nine inches, and should have ploughed it deeper if I could. Then the last time it was ploughed it was ploughed deeper than it had ever been, and the result was, we had the largest crop. I do not know but it may be wrong, but that experience proves to me that the better way is to plough deep, and instead of going down only three or four

inches to bring up an inch or two at each ploughing of the subsoil.

Mr. WARD. I cannot say that I think the crop would have been improved if a little of the virgin soil had been turned up, because, just as you add the virgin soil you have got to add manure enough to bring that up to the fertility of the original soil. Therefore I do not think it advisable to plough up any of it.

Mr. JOHNSON. I like the remarks of Mr. Clement and Colonel Ward, and also of the last gentleman who spoke, and I agree with them as a general thing. I think there can be no rule established in regard to the depth of ploughing, because the soils vary so much, even upon any one farm, in my locality, that we can establish no rule there for the depth of ploughing. On some of our gravelly, sandy soils we plough pretty deep; on clayey soils we do not plough so deep. We have forty acres of land that is clay bottom mostly. It has a good many stones in it. About three acres of that land we have spaded with the narrow Irish spade. I spaded down into the clay, turned it all over, harrowed it, brushed it, and it has produced good crops for the last two years, with two top-dressings.

When I first commenced ploughing upon clay land I ploughed pretty deep. I ploughed in the fall, and in the spring it troubled me to cultivate it and get it ready to plant, it was so wet and soggy. Lumps as big as my fist were scattered all over the ground, and it was almost impossible to work it. Then I commenced ploughing that land not so deep, about five inches, and ploughed it in the spring, about three days—sometimes only one day—before I put the manure upon it; but it worked nice and mellow, and I got much better crops than when I ploughed in the fall and ploughed deeper. I find that with fall ploughing the ground does not work so easily as it does when ploughed in the spring. My mode of ploughing is to plough as near the time of planting as possible. I like to get in my grain from the 10th to the 15th of May, if the land will permit of it; if not, it has to go in later, but as soon as I can do it. I plant my corn and potatoes the first of June, generally. I spread my manure on and harrow it in with a two-flanged harrow. It does not put the manure in very deep unless it is very fine, and mine is usually rather coarse. Then I strike it out with a striker and

plant it. If I have time in the fall I plough the ground and let it lie and take the winter freezings, and in the spring I plough it with a pair of horses and harrow it. In the course of a few days I cross-plough it with a light plough and seed it. On my old ground, where I plant one year with seed, I put my manure broadcast; then I plough with two horses and let it lie from two to ten days, just as it happens. I plough that also twice before seeding. The second time of my ploughing, after seeding, I plough a little deeper than the first time, so as to get up a little of what Colonel Ward calls the virgin soil; and the second ploughing mixes it up with the soil, and I have better results than I otherwise should. I think I want some of that soil, but not too much of it. After ploughing it the second time I bush it, and then I sow it and re-bush it. That is my habit in seeding my ground.

I once took up a piece of ground where clay did not predominate so much as it does in some parts of my ground. I ploughed it ten inches deep. It had not been ploughed for twenty years, certainly, and I am not certain that it had been for forty years. I manured it thoroughly, broadcast, planted it with potatoes, and got a very light crop. I ploughed it again, and manured it as usual—let the plough go down seven inches, but usually I think my ploughing would be only about six inches deep—but I never have got a very good crop from it yet.

Mr. BIRNIE. How many years ago was that?

Mr. JOHNSON. Probably 1852, or 1853. The last time I seeded it was three years ago. I mowed it twice and it has not recovered; it is not as good a piece of mowing as the piece adjoining it. It did not give so much grass this year as the piece adjoining.

Mr. BIRNIE. It is rather a stiff soil?

Mr. JOHNSON. It is, but not so much so as most of this forty acres.

A MEMBER. Did you plough the second time seven inches deep?

Mr. JOHNSON. No, sir; I ploughed about six inches deep.

Mr. HUBBARD. We shall all readily see that ten inches is enormously deep. We are very likely to think that we plough deeper than we do. I find by actual measurement, on land that I should say was ploughed seven inches, that it is not

ploughed so deep. Now, to plough ten inches is enormously deep—it is certainly three or four inches beyond what is termed deep ploughing. I have no doubt in my own mind that if we should plough our ground by measurement ten inches deep, we should suffer exceedingly from it. I should call six or seven inches deep ploughing, and if I should go three inches beyond that, I should expect to suffer exceedingly from it. The character of the season makes a difference in this respect. If the season is dry, and we plough shallow, we shall suffer very much quicker than if we ploughed deeper.

Mr. COLE. If six inches is deep ploughing, I would like to have Mr. Hubbard define shallow ploughing.

Mr. HUBBARD. Six or seven inches I said. I must say, that I should consider nine and ten inches enormously deep.

Mr. BIRNIE. I question if we have many places that will bear ploughing ten inches deep. I know one of our most successful farmers, located on a sandy plain, who puts his plough right down to the beam, and it is an extraordinary plough. He cultivates one part of his land as a market garden. His argument is, that the land retains the moisture, and he has never any fear that his crop will suffer in a dry season, and he gets tremendous crops. But my experience, on my land, would be like Mr. Johnson's; so that it is very evident that circumstances must control this matter. We cannot lay down a rule, for all parts of the State, that a certain depth of ploughing is necessary; we must be governed by circumstances.

Mr. JOHNSON. In regard to the team I used, I will say, that at that time, I had been taking out the stones from some low ground, and it required a pretty heavy team. I kept six heavy oxen at work upon that land, and I cleared it pretty much of stone. I put four of these oxen on a large grass plough, and all my endeavor was to keep the end of the beam out of the ground. I wouldn't be surprised if I ploughed some as deep as twelve inches. It went very deep, and it did not turn the furrow over entirely, but it laid up, and some was rolled over. It was a coarse piece of ploughing. I let out a piece of this ground to be planted. The man was a firm believer in deep ploughing, but I persuaded him not to plough too deep. He ploughed that ground, I should judge, about eight inches deep, and planted it with a crop of potatoes, and there was not a

weed on that field during that whole year. But the crop didn't pay for hoeing, to say nothing about ploughing. The man performed the labor very well, and subdued the land thoroughly, and I had to make him an allowance, because he couldn't afford to lose the crop. I have ploughed the field twice since, from five to six inches deep, and I have got crops of potatoes and corn; a heavy crop of potatoes for us. Not such a crop as this gentleman from Williamstown has been raising, but heavy as potatoes have gone for the last few years. Ten or twelve hills made a bushel; and they were all large and nice. This experience evidences to me that that kind of soil will not allow of deep ploughing.

Then I have another piece of ground—a sandy, gravelly soil—which I ploughed, several years ago, when I first bought it, deeper than I do now, for I found deep ploughing was recommended, and planted it with corn, and did not realize half the crop I have realized since by shallow ploughing, on that land. I say, therefore, it is impossible to lay down any general rule for ploughing. Mr. Demond was here yesterday, and would have been glad to have spoken upon this subject. I know of one instance which occurred near our institution, on ground belonging to Mr. Butler. Mr. Demond ploughed it eight or nine inches deep, and Mr. Butler found fault, because he said land ploughed deep did not produce so well as that which was ploughed shallow. Mr. Demond went upon the ground in the fall, and it turned out that where he had ploughed there was the best crop of corn. That is sandy soil.

Mr. COLE. The southern part of Berkshire has raised such crops of corn that the eastern delegates are a little doubtful about the truth of the stories; and I call upon Mr. Thatcher. I think he can tell us something about how they plough there, where they raise such crops of corn.

Mr. THATCHER, of Lee. I should present the same results which Mr. Johnson has stated. We are now using, in southern Berkshire, a plough which turns over the sod from six to seven inches, with a subsoil attachment running from two to four inches still, which does not lift the virgin soil the first year to the surface. This attachment, running behind the mould-board to the depth of four inches, usually stirs the whole width of the furrow to that depth, after we have turned over the sod.

Our idea is, that by loosening the subsoil by this attachment, we enable the rains to soak down through, which they would not do, our subsoil being clay, (which will not take in water, unless the earth was loosened,) and our corn roots run down there to get their moisture. The effect of the manure is felt there; and the second year, when we come to plough up again, after this stirring of the subsoil, we drop our ploughs down and throw up part of this subsoil. I can illustrate the effect of that, perhaps, in this way. If you take a small box, and fill it five inches deep with ashes, and turn on a certain quantity of water, enough to make the ashes extremely wet, you will see at once that there will be a caking of those ashes, that is, a hardening process, which would not be felt if the same quantity of water were poured upon ashes eight inches deep. The roots will run down into that soil, or the ashes (as I am using that illustration,) and the water will be retained throughout those ashes, of that depth, longer, and be more beneficial to the crop, than it could in ashes four inches deep.

I used one year a steel plough with this subsoil attachment, and I turned over my green sward six inches, with the subsoil attachment running under four inches. I think we certainly, in that northern country, derive a benefit by stirring the soil the first year, and very great benefit, without lifting it to the surface, and then lifting it to the surface, and mixing it in the succeeding ploughing. I have in my mind now a six acre piece, which I am confident, in fact I know, would not half feed a cow through the season. We could not get more than four or five inches of soil before we came to a hard clay subsoil, that retained the water upon it, making the land cold, backward, and sour. After ditching that land, and putting in some under-drains (which of course benefited it, without ploughing,) we commenced ploughing this land in this way, to get a deeper soil; not using the subsoil attachment that time, because we did not have it, but using a common plough, following the furrow afterwards, and lifting one or two inches at a time. I am speaking within bounds when I say, that the second year, the crop of corn paid twice over for the labor of ditching and double ploughing. It is as good a piece of land now, I think, as can be found in the town of Lee.

These ploughs are used in almost all parts of southern Berkshire, and I think, where they are used, they are exceedingly well liked. The subsoil, as I have said, is not lifted to the surface the first year, but stirred, giving an opportunity for the rains to penetrate it—and of course the heat of the sun will penetrate it during the summer more than it would if not stirred—and it is lifted in the subsequent ploughings.

Mr. BIRNIE. You spoke of 'ditching. How thoroughly was it ditched?

Mr. THATCHER. I put in ditches within two rods of each other, in which I put under-drains. Over the widest part of that piece, I think I put in eight drains. The piece was twenty-six rods wide. On one side, I did not put any drains; it was rather dry land. I did not use tiles; I used the stone on the piece, covered with straw, and then sod.

I should agree with Mr. Johnson exactly, that in turning up that subsoil to the depth of ten inches, I should not expect to get a crop the first year. My plan of ploughing for corn is to turn in the manure in the fall to the depth of six inches; and I always mean to use something to start the corn in the hill the first part of the season. I had a very good crop of corn this last season. I ploughed in a good quantity of manure, and took a great tablespoonful of superphosphate of lime to the hill. I start it with this in the spring, and the roots then descend and get the benefit of this manure which I ploughed in in the fall. I am very much in favor of this subsoil attachment, which we are using very extensively in that part of the State. I should use it on clay lands, certainly. I am in favor of deep soil. The deeper soil I can get the better my crops are. If I am going to raise carrots I want a good depth of soil, where they can run down without bringing up against any rocky surface.

Mr. PORTER. I can readily coincide with the remarks just made by Mr. Thatcher in regard to ploughing deep. I am a very strong advocate of deep ploughing; not less than eight inches—from that to ten. I have used the same attachment to which he refers for the purpose of loosening the subsoil, having an attachment that will go down as deep as twelve inches. Our soil is not very clayey. It is a sandy, clayey loam, some parts of it. The Connecticut River soil is not like the soil of the mountain towns. Our mode of ploughing now is very different

from what it was when I was a boy. Then our fathers always ploughed from four to six inches deep, and their crops of corn went from twenty to thirty bushels to the acre ; if they got forty bushels they thought they had an enormous crop. We have increased the depth of ploughing, from the time I commenced to farm, from five and six up to nine and ten inches. I have invariably perceived the best results where I have ploughed deep. In dry weather it stands the drought better ; in wet weather it stands the moisture better, for the water has a chance to soak away ; and I always have the best crops.

In regard to the kinds of ploughs we use, I have a plough which has been introduced but a few years, and there are but very few of them with us, manufactured by the Collins Manufacturing Company in Connecticut. It is a steel plough, with which we can turn just as nice a furrow as we formerly did with a cast iron plough six inches. We always plough our tobacco lands two or three times—never less than twice, and oftener three times, in the spring. Our first ploughing is slight—from five to six inches. The object of this is merely to get the manure out as early in the spring as we can, and get it into a state that will fit it to feed the plant as soon as possible after it is set out. Then just before setting the plants, from the first to the fifteenth of June, we plough it again, and plough it deeper—eight or ten inches—depending upon the character of the soil.

Mr. BARRETT. The Rev. Mr. Clark, of Waltham, who is here to-day, has had some experience in deep ploughing ; we should be glad to hear from him.

Mr. CLARK. I am very much obliged to my friend for giving me an opportunity to say a few words, and I will say but a few words in the presence of the “assembled wisdom of the Commonwealth” on the subject of agriculture. I have myself supposed that this question of the depth of ploughing must be settled by circumstances, and that it depends very much upon two considerations : one of them is the quality of the soil to be cultivated, and the other is the kind of crops we propose to raise. I recollect that last year, at Salem, Mr. Benjamin T. Ware, of Marblehead, a very intelligent cultivator of the soil in the line of market gardening, said the only use he found for a subsoil plough was in loosening up his carrots, so that he could

get them out of the ground easily in the fall. I was struck with that remark, and have remembered it, because it was not quite in harmony with my own views upon the subject. I am not much of a farmer myself, though I try to cultivate some few acres of land, and do it somewhat thoroughly. I am more in the habit of spade husbandry than of ploughing very extensively; and I have noticed this, that where I have told my man to spade the land two spades deep, and undertaken to raise carrots, it has required two or three years to recover from the effects. It raised so much of the subsoil to the surface, that even with very liberal manuring I have found it required two years for the land to recuperate itself.

I have had occasion sometimes to dig out rocks, when a great deal of the subsoil was necessarily thrown on the surface; and I have always noticed that land so treated requires some two, three or four years to recover itself from the effect of that operation. In the end it is doubtless a great advantage to have these stones removed; but the life of the soil, for the time being, has seemed exhausted by that process. We bring to the surface a cold, gravelly soil, and it takes a long time for the dews and the rain and the sun to turn it into fertile soil; and yet they will do it in the end, and therefore it is better to have these stones removed.

Three or four years ago I had occasion to build a sidewalk near my house, of heavy stone. No soil was put upon it, but there has sprung up there a fair crop of grass, made there by the heavens—by the action of the sun and the rains, and the attrition of those particles of stone upon one another—for the walk is not travelled much by passers-by. I think, therefore, that bringing this cold soil to the surface, although it is injurious for a few years, is ultimately highly beneficial. We thus deepen the soil, and I think it is very important, especially if we want to cultivate root crops, to have the soil very deep.

I wish we could harmonize the different views with reference to the use of the subsoil plough, which we hear from the gentleman from Berkshire, and those which are entertained in this part of the Commonwealth. In Berkshire they have a very deep soil—an excellent farming region. Here around Boston, where we live, especially in Waltham and that region, nature has not done much for us. What we get there we have to get

by the use of money and science, and then we do not get very large crops. I do not think the subsoil plough is of much use with us, until some few years have passed away; then I think perhaps the results of it begin to appear, and it may be said to be a very useful implement for the farmer to use, on the same principle that deep spading is useful, though not for the first few years.

Mr. BROWN. The difficulty with regard to ploughing is of the same character as all the difficulties which attend the business of farming. Unlike all other business, we have no precise mathematical rules which we can apply generally to our business. The carpenter has his square and his rule, and scarcely strikes a blow in the course of the day that he does not strike on rule; and when he lays out his work in the morning, he can see in his mind's eye just the result of his day's labor. *He knows just how that door or that window-frame must come out, and it will come out just as he sees it. I want to know if any farmer can tell me he anticipates with any such confidence the result of his labors? There is not probably a farmer on the face of the earth who can do it. The business of farming is the most abstruse and the most difficult business men ever engaged in. It requires more learning, more experience, and closer application, than any business that ever devolved upon man to perform; and therefore we can see the necessity of having this Board of Agriculture in the State, to harmonize as much as possible, as Mr. Clark and Mr. Birnie have said, these conflicting views, that in going on with our labors we may do the work that will secure the best results.

Mr. Birnie and Mr. Clark have said, in their remarks, and it is true, that the depth to which land should be ploughed depends upon circumstances. Now, if I were to ask how deep you would plough for a crop of carrots, there is not a man who would say less than twelve inches, and some would say two feet. Then, if I were to ask how deep you would plough for a crop of corn, there are many who would say five inches is enough, six at most, and others would go as high as eight or even ten inches. So it would be with regard to ploughing to get a good crop of English grass. Now, what I beg of you is (because we are looking to you for light from all parts of the Commonwealth,) not to go from one extreme to the other. In

all parts of the Commonwealth, a few years ago, they advocated deep ploughing. Now, I see you are going on the other side. You are inclined to swing, as Prof. Agassiz told us last night the waters of the Amazon do, first to the south and then to the north. I say, avoid these extremes.

I have no doubt you must be governed in this matter by circumstances—by the nature of the soil, and the nature of the plant you are going to put into that soil. If you go to an excavation where they are cutting for a railroad, and find a place where herdsgrass and redtop are growing upon the top of the embankment, you will find that the roots of these grasses run from one to six feet. I think I can show you illustrations, in this town, that will satisfy you that roots will run down two or three feet, under favorable circumstances. What would you do with soil where you go down five or six feet before you come to the hard pan? What would the grass do, and what would the root crops do?

Then the effect of drainage is to deepen the soil. The elements of fertility are profuse in the subsoil. Even if it is clay, it is full of the elements of fertility. I heard a gentleman state yesterday that he dug a well twenty-three or twenty-four feet deep, and threw out the gravel, which was spread round the house, and before the month of October, that gravel was completely covered with grass, without any seed, or manure, or anything. Would that grass have grown, unless the elements of fertility were in that ground? By no means. I really hope that you will endeavor to keep the happy medium, and lead us on in it, who are to read your publications.

To illustrate this matter: A few years ago, people went mad about breeds, especially about breeds of pigs; and one man was so taken up with the matter that he went and got a Suffolk pig, and he said, there was nothing like it; that he would eat more and produce more profit than any other man in the world. One day, he tried him, to see how much he would eat. He gave the pig an entire pail of milk, eight or ten quarts, and he drank it all. "Then," said he, "just for the notion of it, I took him up and dropped him into the pail, and the little cuss didn't fill it half full." Let us be able to rely upon what you say, and then you will do good as a Board of Agriculture.

A MEMBER. What could we do with asparagus, in the cultivation of which our people engage so largely, if we did not have deep soil?

Mr. BROWN. If you want to deepen your soil, stir it, as Mr. Thatcher says he did. That is the true principle, in my opinion. Then your plants have an opportunity to run down in search of moisture, and there is an opportunity for the water to pass away. Do that gradually, and instead of deep ploughing hurting the soil, my opinion is, you may plough it twelve inches and keep tilling it for several years, and you need not add a particle of manure; the heavens will make it into good soil; from slate color it will become, in the course of a few years, as black as your hat, only let it have access to the heat of the sun. What we want to do is to harmonize these things, so that what is done in various parts of the State will all be applicable to the work in hand; so that we shall not be at work, as half of us are, without any result, losing our time and money. The business is a most intricate one, requiring all the skill and patience and industry we can command; and it is the most exalted labor, too, that man ever engaged in. I am delighted to find this Board going about the State and calling the people together to discuss these important questions; and I feel ashamed that our people in this town do not appreciate it more, and come here to take part in your deliberations.

Mr. WATKINS. I should like to ask my friend Mr. Smith how he spoiled his land by subsoiling it, as he mentioned yesterday afternoon? I would like to get these points together, so as to harmonize them, if possible, as Mr. Brown suggests.

Mr. SMITH. I have been an interested listener to the discussion upon this subject ever since it commenced, and I had come to this conclusion in regard to the matter, which has been expressed by two or three of the last speakers, and thought it entirely unnecessary for anything more to be said: that it depends altogether upon circumstances—upon the nature of the soil, upon the weather, and the plants which we wish to put upon that soil. Although we may not agree upon the topics on which we speak, it makes no difference. It will not be expected that we shall agree in all things, coming as we do from all parts of the State. With the different soils we cultivate—with the different crops we raise—it is not to be expected that we shall

agree in all respects ; and although our record may not agree—although it may seem to some that those who shall peruse what we say here will gain no information therefrom—yet we must take into consideration our different localities and our different circumstances, and, as the saying is, each one “ pays his money and must take his choice.”

I did not expect that the few remarks which I made yesterday would be concurred in by the majority of those present. I made them to draw out discussion. I said that in my opinion the prevailing notion of the community was not so much in favor of deep ploughing as formerly. That I suppose to be the case, and it is our nature, as has been expressed here, to go from one extreme to the other ; too much so. We should endeavor, as has been said here, to guard against going so far the other way that we shall retrograde instead of going forward.

From the discussion yesterday and to-day, I have formed the opinion that the majority of those who have spoken are against very deep ploughing ; but I have also come to the conclusion, as I have already said, that it depends altogether upon circumstances. We need to know the circumstances in these several cases that have been mentioned. With regard to Mr. Thatcher's experiment, we learn that until that piece of land of six acres was underdrained, the satisfactory results were not obtained. This should be taken into consideration. I cannot recommend deep ploughing upon heavy or wet soil until it has been underdrained ; and not only underdrained, but heavily manured. That is the case with Mr. Porter's lands. They are rich. If he manures for corn, it is very heavily, and also for tobacco ; and that is the reason why he has such good success with deep ploughing, and why he can follow the practice of deep ploughing.

With regard to subsoiling, I almost regretted that I stated yesterday what I did, because I was not willing to have it go abroad that the opinion of the Board, or my opinion, was against subsoiling, because I am not convinced that it is injurious to the land, if adopted under proper circumstances and on proper occasions ; and as an opinion seemed to be expressed opposed to subsoiling, after I said what I did, I said I regretted throwing that out. The circumstances under which my experiment was made I mentioned yesterday. The land was level—

our river bottoms—in a fair state of cultivation. I was fitting the piece for wheat. It was thoroughly ploughed. I followed afterwards with a subsoil plough, and raised and loosened the soil, and let it fall back again into its place. The result was, it took several years, and many loads of manure, to bring that part of the field (for I tried the experiment on only one side of the field,) into as good a state of fertility as the other. But by no means would I condemn the practice of subsoiling; for we all know, as has been remarked by Mr. Brown, that by continually exposing the subsoil to the air, we render it fertile. This we all admit, and we need to stir our soils more, we need to go deeper and deeper every year, we need a more thorough cultivation, and above all things, we need to talk upon the subject of underdraining. Water is the great drawback on the farm. Our lands are too cold. We may till those lands at any season of the year, still it is no advantage, essentially, if we are to be troubled with water in the subsoil.

Mr. CLEMENT. I would like to have Mr. Porter state whether his soil is level or not. I understood him to say he would recommend subsoil ploughing on all land, of whatever character.

Mr. PORTER. It is level.

MANURES.

The subject of Manures was then taken up for discussion, and the Chairman (Mr. HYDE, of Lee,) opened the debate by reading the following paper:—

Manure lies at the foundation of agriculture. It is the raw material from which the farmer manufactures his products. So highly is it prized by the Belgians, that they call it “the god of agriculture.” The increasing estimation in which it is held in our own country is manifest from the increased price we have to pay for it. In New England the price has doubled within the last ten years. We are not sorry to notice the enhanced market value of manure, for the tendency will be to induce every one to husband his resources in this respect more carefully, and the agricultural products of the country will be increased proportionally. The waste of manure is the crying sin of all new countries. Much as we have improved in New England in the increase of our fertilizing resources, there is still a wide margin

for further improvement; and on the virgin prairies of the West we have seen the torch applied to the stacks of straw in order to get it out of the way; and in many places the piles of manure around the barns are considered a nuisance, and if Hercules' mode of cleaning the Augean stables were possible, it would doubtless be resorted to. We have seen, during the past summer, a sewer constructed in one of our large villages with its mouth terminating in a brook, so that the refuse which should go to fertilizing the surrounding country is now carried to that great reservoir of fertility, the ocean. The inevitable absorption by the sea of the fertilizing material of the land would seem to be sufficient, without our adding to the loss by turning our sewers in that direction. Possibly the upheavings of nature, in the course of time, may bring to the surface the vast deposits now being made in the ocean; but it is not worth while to make too large investments where the returns are in such an uncertain future. We think we are speaking within bounds when we say that not half the resources of manure, even in our favored New England, are as yet developed. The object of the present paper is briefly to allude to some of these undeveloped or partially developed resources, and, if possible, to stimulate to a more careful husbanding of the life-blood of the farm; and if allusion is made to the writer's own experience, it is hoped the reference will not be attributed to self-glorification, but to a desire to make that experience available for the benefit of others.

The first resource we will mention is the muck swamp. This is a reservoir of vegetable matter, the slow deposit for centuries of wood-leaves, moss and herbage, for the most part submerged, so as to prevent rapid decay. Possibly these muck swamps are the incipient states of future fields of coal, and may by pressure and heat be converted into that concentrated form of carbon. Be this as it may, they seem to have been reserved by a kind Providence to supply the rapid waste of vegetable matter which always occurs in dry, cultivated lands. As the coal-fields are the great wood-houses of nature, so the muck swamps are her great manure-beds; and as the development of the one has vastly increased the manufactures of the world, so the use of the other tends to supply the demand for the products of the soil which manufactures create. These swamps were formerly

looked upon as so much waste, and dreaded as the hot-beds of miasma ; but by draining they have not only been clothed with sweet herbage themselves, but have been made to contribute to the beauty and fertility of the uplands. As a basis for the compost heap we have never found anything equal to muck. In a dry state it is exceeding porous, and consequently a great absorbent of gases. A dead horse buried in it gives forth no effluvia, and shovelled over at the expiration of a year will give half a dozen loads of fertilizing material, rich in ammonia and all the elements of vegetable life. “ We speak of what we know, and testify to what we have seen.” For a quarter of a century we have used more or less muck every year ; and although keeping little stock, the farm has steadily increased in fertility. We would not recommend applying it directly to the soil, unless of a sandy or gravelly nature. Muck is a great absorbent of moisture, and is therefore naturally cold, and should not be applied to moist clay or loam lands till it has been chemically changed by coming in contact with ashes or fermenting manure. If raised from its wet bed in the swamp and exposed to the air, it gradually loses its cold, sour nature, and may be applied without composting, and with benefit to almost any soil not already abounding in vegetable matter. In this state it is very similar and acts very similarly to chip manure. To get the quickest returns from muck, however, it should be placed in the pig-pen, barn cellar, yard or compost heap.* The catalytic influence of the fermenting manure upon the muck is wonderful. It is much like the influence of leaven in a mass of meal. As with a proper degree of heat and moisture all the meal is leavened, so, with the appropriate adjuncts, the muck undergoes speedy fermentation and decay, and becomes fit food for the growing vegetation. Thus the round of nature from death to life and life to death is accelerated. No definite rule can be laid down for the proportions of a compost heap. The more manure, the quicker is the fermentation. As a general rule, two-thirds muck to one-third manure we have found a good ratio. If ashes are used instead of manure to cook the muck, one bushel of unleached or two bushels of

* An occasional layer of muck on the pile of horse manure to prevent fire-fanging and add to the amount and value of the pile, cannot be too highly recommended.

leached are sufficient for five bushels of muck. Lime, also, acts favorably on muck, and one bushel, slaked with brine, will sweeten and render fit for use ten bushels of the vegetable matter. The mechanical effect of muck on the soil must not be passed by unnoticed. A loose, gravelly or sandy soil is rendered more compact and moist, and a stiff clay more friable and less likely to bake and crack.

As the second neglected source of manure, we will mention the refuse of the sink and the slops of the house generally. As we see them carelessly thrown around many houses, they are redolent with the seeds of death, but appropriately used are abundant with the elements of vegetable life. To dispose of them in the most sanitary and economical manner, should demand attention from every householder. Health and thrift equally require this. Few substances ferment more rapidly and produce a more vitiated air, than soap-suds and the slops of the chamber. The very fact that they taint the air so badly, is proof positive that they contain the elements of fertility, and it is a pity that so few heed the admonitions of that delicate chemical instrument, the nose, and pay so little attention to this source of fruitfulness for the soil and sickness to the family. When the premises are so situated that it can conveniently be done, the best mode probably of disposing of this refuse, is to conduct it by a drain to the barn cellar, where it can be absorbed by muck, charcoal dust or other absorbent. Where the barn is located at too great a distance or elevation, a cess-pool should be dug at some convenient point, and if kept well lined with some absorbent, the amount and quality of manure that can be thus manufactured will surprise those who have not tried it. Care must be taken to furnish the outlet of the sink with proper valves, so that the gases from the pool may not return into the house to the disgust of the olfactory nerves of all the household. The manure thus made is good everywhere, but we have found it specially efficient in growing cucumbers, squashes, &c.

Another neglected source of fertility is night soil. Partly from ignorance of its value and partly from prejudice, night soil has never received that attention in this country which its merits deserve. By most families it is considered a nuisance, to be abated as best it may, often by a bonus to any one who will

remove it. Handling it, is indeed, not as pleasant as gathering roses, but the roses may derive from it their exquisite coloring and fragrance. It is one of those fragments that should be gathered, if we desire that nothing be lost. We carefully save the deposit of the stable, and shovelling amidst the filth of the barnyard seems to us but play, as we are accustomed to it and know that what has fed our cattle must go to feed our crops, or farm and farmer will alike be impoverished; but the richer deposit of the vault is neglected, and the aggregate waste is immense. No manure we have ever tried will compare in cheapness and fertility with night soil. The value of animal manure depends greatly on the quality of the food which the animal consumes, and as man is the most richly fed, so his excrements are of the richest nature. In the vault is found fecal matter derived from flour, eggs, butter, beef and pork, all well salted and peppered, and necessarily containing the elements fitted to reproduce this highly concentrated food. Theory and practice agree in placing poudrette at the head of animal manures. Johnston says, dried night soil is equal to thirty times its bulk of horse manure. This is the calculation of the chemist. Our experience with it for many years may not justify so high an estimate, but from no manure have we derived so satisfactory results. Living near a populous village, we have had an opportunity to obtain an abundance, and have not been slow to improve the privilege. Our practice has been to compost it with muck or the refuse charcoal of a neighboring furnace. Coal ashes, sods from the roadside, or leaf mould from the forest will answer a good purpose for the base of the compost. We have also tried pure sand in composting, and when the manure is to be applied to clay-loam nothing is better.

Night soil is adapted to all kinds of crops. We have never known it to fail wherever applied. As it is the result of the decomposition of many varieties of food, so it contains the elements for the recomposition of many. As a nation we are beef consumers, even to a greater extent than John Bull himself, and as all flesh is grass, or mainly derived from grass, we might conclude the compost of night soil would be good for the meadows, and so we have found it. For corn and roots it seems equally efficient. It is so good for every crop, that we are at a loss to decide where its application is best. As so many thou-

sands of barrels of flour yearly come down the Erie canal, into New England, and pass through the alimentary canal into the vault, we should suppose poudrette would be specially adapted for raising wheat ; but of this we have had no experience. A prejudice exists in the minds of some against the use of night soil, arising from its odor, and a fear prevails that its presence in the soil will taint the growing crop. Nature's laboratory is too skilfully managed to give any occasion for such apprehension. Every pile of manure is a mass of filth and is full of disgusting odors, but placed in the soil, the living plant separates and sublimates the particles, with a skill which distances all science, and returns them to us, glowing with life, beauty and fragrance, every way adapted to supply the wants of man and the inferior animals. This resurrection of these vile particles, so purified, is analogous to the resurrection of which Paul speaks : " It is sown a natural body, it is raised a spiritual body ; it is sown in weakness, it is raised in power."

Much night soil is wasted by not frequently coating the vault with some absorbent. Economy and health alike demand that this should be done. In warm weather especially it decomposes rapidly, and the gases, noxious to man but vital to the plant, pass off abundantly, unless retained by some absorbent. A frequent sprinkling of plaster or charcoal dust will save this waste. Muck, sods, sand or any soil will answer for an absorbent, and will serve as a deodorizer, so that the contents of the vault can be removed with less discomfort.

Another neglected source of manure is the hennery. We send vessels around Cape Horn to import the deposits of the birds on the Pacific islands, but think lightly of the equally valuable deposits of our domestic fowls. Distance lends enchantment to the view of guano on the Chinchas, while the home-made article seems too homely to be noticed. Fowls are high liver. Their bill of fare is meat and vegetables for the first course, grain for the second, and fruits for dessert. Their excrements are therefore rich, abounding in urate of ammonia and phosphate of lime, the two most valuable substances in manure. If exposed to winds and weather, much of the value vanishes into thin air. It doubtless comes back to the earth again in the rains and dews ; but is more likely to fall on some neighboring farm or State than on the land of its rightful owner. It is not

much less a mistake to permit the droppings of our fowls to lie under cover, but uncovered with some composting material. In this situation there is less waste from decomposition ; but we have found the dry excrement filled with vermin of various kinds that make their abode in it and feed upon it, and consequently diminish its value. It is wonderful to see the provisions which a kind Providence thus makes for turning all forms of decaying matter again into animal life, and keeping the air pure and the world full of the higher order of organized existence. We would not counteract this benevolent plan of the Creator, but rather be co-workers with Him, and turn all this vile, decaying matter, first into such vegetation as we may choose, and thence into such animal life as we may select. This is man's legitimate province, and herein he exhibits his skill. We have found the best mode of preserving the droppings of our domestic fowls is to keep the floor or ground under their roosts well littered with muck or earth of some sort. As both the solid and liquid excrements are voided at once, this litter is very essential for its proper retention ; and the quantity of the manure is greatly increased without much diminution of its quality.

We might speak of the hog yard as a manufactory of manure on a large scale, but we fear prolonging our subject too far ; and so much has been said on the capacity of the pig for working our manure, that a reformation has been effected in the management of the piggery. The hogs of New England are no longer the public scavengers, foraging at large, but are boarded at home, and in pay for their board shovel over the compost heap, furnishing their own tools. The barnyard and the barn cellar have also received greater attention and improved management of late years, so that there is little occasion for referring to these sources of manure. No good farmer now allows his cattle in winter to poach his fields in search of water and dry forage, but they are fed, watered and made comfortable at the barn, so that their droppings are not scattered from Dan to Beersheba, and half their food consumed in the search for it, and in keeping up their animal heat.

As the last neglected resource for manure, we desire to call attention to the refuse of our manufacturing establishments. Around most of these there is an accumulation of highly fertil-

izing material, which is often left to pollute the air, or thrown into the river to be wafted to a bourne from which it will not return in this generation. If we expect the agriculture of Massachusetts to keep pace in the march of improvement with its manufactures, we must avail ourselves more thoroughly of the fertilizing refuse of these manufactures. The hair parings, spent bark and liquids of the tannery, the shoddy and washings from the woollen factory, and the refuse of the soap-boiler are only instances of the undeveloped resources in this direction. The waste of the woollen mill, which even the shoddy manufacturer rejects, will raise the temperature of the compost heaps to bloodheat, and rapidly disintegrate the muck and sods mixed with it. We have had more experience with the waste of paper-mills, and cannot too highly recommend the refuse sizing which these mills furnish. It is the residuum, after the sizing or glue has been extracted from the skins of animals, and consists of hair, undissolved skin and small bones, all rich in the food of plants, too rich for direct application to the soil without first being diluted. Some twenty years since we noticed this refuse lying around the mills, a scourge to the neighborhood, and immediately made arrangements to try its powers on the farm. We found its virtues so great that we have been able to sell the bulk of the hay crop and still keep the farm up to concert pitch. We have uniformly composted it with muck sods or charcoal dust, and prefer to let it remain a year before it is used. We have applied it in the autumn, mainly as a top-dressing to grass lands. Fields thus coated in the fall, start early in the spring, furnish two crops of hay, and remain green till the severe frosts of winter. The luxuriance of fruit trees is so great under its stimulus, that we have questioned whether the great growth of wood was not at the expense of a crop of fruit. Both the skin and the hair contain more nitrogen than flesh, and as the hair decomposes slowly, they make not only a powerful but lasting manure. Much of the sizing of our paper mills is still thrown into the river. It decomposes so rapidly in warm weather, and the odor is so offensive, that the manufacturer is glad to dispose of it in the most expeditious way possible, and he does not look at it, as an Irishman once remarked, with the nose of a farmer.

We have thus briefly glanced at some of the neglected resources of manure, treating the subject from a practical standpoint, and giving mainly the results of our own experience. The subject is by no means exhausted. Our hills and valleys abound with leaves, bones, and other substances, concerning which it would be well to ask the question propounded to Ezekiel, "Can they live again?" We may not see the miracle which the prophet saw, but these decaying objects, now so loathsome to the senses, are all destined to assume new forms of life, and it is our privilege to aid in the transmutation.

Mr. CLEMENT. I must say that the essay of the chairman has pleased me very much, and I presume it has every gentleman present. I was glad to hear him speak with so much emphasis against the monstrous waste of fertilizing materials which are swept from our cities and large villages into the rivers and ocean. The time will come in this country, though we may not live to see it, when there will be those who will be glad to save everything that can be converted into food for plants. I have no doubt of that. It is time now for us to begin to save everything which can be made plant-food. I was glad, also, to hear the chairman speak so strongly in relation to the value of peat meadows; and I was particularly impressed with that, for I have no peat meadow—no bogs to which I can resort; hence I have to buy. I purchased on one occasion half an acre, in order to cart the soil off, and I did cart it almost all away, and was well satisfied with what I did. Then, again, more recently, a neighbor wanted to cut the peat in an adjoining meadow, and I purchased the surface soil. There is a foot, more or less, upon the surface which is not peat; it has been frozen and thawed so many times that it is all pulverized, and we use that as a compost for manure, for absorption in the vault, in the pig-pen, and under cattle, and so on.

In this connection, let me say, that last spring I found myself with quite a lot of pigs on my hands, like some of my neighbors, and some one remarked that he found them about as profitable as female pups of an ordinary breed of dogs. But in order to make the most of them we possibly could, I made a pen under my cattle, and carted this surface soil from the peat meadow in there. I cleared up all the manure I could in June, and early

in September we used one hundred loads more that was made in the interval in that way, by the droppings from the cows, horses and pigs, all worked together. The pigs would tear a load of this surface soil all to pieces in a day or two, and then we would throw in another, or two or three, sometimes; and on a rainy day, we would throw in four or five loads. It was my intention to make a good cart-load—thirty bushels—every day. In September I ploughed some five acres of pretty good grass land, and dressed it with this manure which we had made in that time, and seeded it down immediately. It looked finely before the snow came, and I expect to get a good crop of grass there next year.

I have reflected a great deal upon this subject of manure, and I am very confident that we have all of us got to be more careful, or most of us, at any rate. I suppose there are some gentlemen who are as careful as they can be, or think they are; and yet I apprehend they are not, after all. I think that none of us is quite so careful as he ought to be, in saving all these fertilizing materials.

Mr. HUBBARD. I think we shall all derive great benefit from the essay which we have heard from our worthy chairman. It brings to my mind, what needs to be brought to the mind of every farmer in the Commonwealth—the great law of compensation that is forever operating. If we are continually taking from the lands of New England, we have got to supply that waste in some way. Well, if we will just consider the matter, and save all we may save that is taken from the soil of New England, and return it again to the soil, we shall obey that law of compensation, and supply the waste we have occasioned.

The gentleman has referred to one thing which brings up in my mind this idea: that not only may we save all that we take from the soil of New England, and return it again, and thus make it productive, but, in addition to that, we may save what is brought here from the West. New England is not wholly a farming section of country, but, as has been said, it is the great workshop of the country; and we go to the far West, to those soils which are very productive, and which, as the chairman has said, do not need, at the present time, this compensation for what is taken from them,—we go there for much that we consume, and, as I have said, in addition to all we can save of what

is produced by the land of New England, and return it again, under this law of compensation, to the soil, we can save these products that are brought here from the West and consumed in New England. If we can save that, and return it to the soil, we shall go on continually improving the soil by cultivation. It is often said that this is a hard, rugged and unproductive soil; but if we bear in mind this law of compensation, and return to the soil all we can of what is produced here, and also all we can of what is brought here from sections outside of New England, I think the farming of New England can be greatly improved beyond what it is at the present time.

This is an idea which should go forth, and which should engross the thoughts of the farming community upon this subject. We all know that we cannot take from the soil without returning to it something to supply the place of that which we take away in the crops; and if we will give our attention to the ideas that have been thrown out by the chairman of this meeting, and see to it that we save what can be saved, and return it to the soil, we shall do much towards promoting the interests of agriculture in our communities.

Mr. SMITH. I am very glad to see so much readiness on the part of those who have spoken upon this very important question. It is broad enough to give occasion for an interesting discussion, for it may take in all sorts of manures—the excrements of our stock, the guanos, phosphates, and artificial manures of all kinds. Now, if we agree in regard to the different kinds of manure, I am afraid we shall disagree upon the modes of their application, for we are confined by the subject to no particular description of manure, but it may include everything.

It has been suggested by the essay before us, which is a very valuable one, as we shall all agree, that the strength of manure depends a great deal upon the food of the stock. That is an important consideration. I am often asked the question—“Which do you make the most manure from, your sheep or your cattle?” My answer is this: if you feed light food to different animals, you will have the same kind, the same amount, and the same strength of manure, provided you save it all. One great advantage in keeping sheep is, that we are more apt to save the urine, the liquids as well as the solids.

If we were as particular to use absorbents to save the liquids of our horned cattle, as we are to use bedding and absorbents to save our sheep manure, my answer is, we shall have equally strong manure.

Where I live, manure is "the chief end of man;" it is our "staff of life;" it may be considered, perhaps, what we live for. For what do we farmers do but to raise our grain and our hay to feed our stock, to make our manure, to feed our crops, to feed our stock—and so it goes, year in and year out; and the great, absorbing question with us is, what shall we do to make more manure? I hope that this question will be fully discussed by all present, that we may take it in all its branches, and be profited thereby.

The CHAIRMAN. Will Mr. Smith give us his mode of application.

Mr. SMITH. "Where doctors disagree, who shall decide?" the saying is. The Massachusetts State Board of Agriculture has adopted measures to provide for experiments to ascertain what is the best way in which to apply manure to different crops, but it has left out of the calculation the peculiarities of season, and a thousand other things, upon which the answer to the question in great measure depends. I am satisfied, that in most cases, the best way to apply manure is to apply it near the surface, yet a gentleman on my right ploughs it in to the depth of five, six, seven, eight and ten inches. You ask my own method. I am of opinion that we do not lose so much of the strength of the manure by evaporation as we have formerly considered, and as I have said, for most all crops, I put it at or near the surface. For my corn crop, I plough either in the fall or spring, the time depending upon circumstances. I am in favor of the fall, because the teams are in better condition, and I gain so much time, which is of great importance, with all we have to do in our short seasons. In the spring, I haul my manure on, and harrow it in two or three inches. I am satisfied that is the best way for the immediate crop, and for the crops which will follow that. My farm is so situated, that some parts of it, I do not think it advisable to plough at all. Those lands I keep in grass, and upon them I put yearly a deposit of compost manure; and I am satisfied that by so doing I receive the greatest profit from the grass that I could get. The quality

of the hay is better than where we re-seed oftener. But upon other soils, which are more easily ploughed and more easily worked, I am accustomed to apply manure to the corn crop, and either seed after the corn, and then follow with grass, or perhaps grain.

Mr. BROWN. In the first place, Mr. Chairman, I want to thank you sincerely for the texts you have given us in your paper—texts sufficient to keep us in discussion three days, and a profitable discussion, too. I think if we should devote the whole time to one topic, it would be the best thing we could do, and that is, the value and uses of peat. It makes no difference whether it is coarse or fine, I presume. I notice that Prof. Johnston and other chemists call it peat, no matter what its condition is—whether it is in an advanced stage of decomposition, or whether coarse enough to cut and burn for fuel—as it often is on the meadows. I think the hopes of a progressive agriculture in a considerable part of the State of Maine, in the eastern portions of the States of New Hampshire, Massachusetts and Connecticut, depend entirely upon their peat swamps, and the peat in the valleys between high hills, which is infinitely better than the peat of the bogs. You find low places or tracts of high land between ranges of hills, and there are the best deposits of peat to be found in the country. It has been accumulating for ages, thousands, perhaps millions of years, from the vegetable matter of the hills, leaves, decayed branches, dead grass, and all sorts of herbage; and at the same time that these have been decaying, some of the elements of the hills, the manures, I would say, are washed down into these low places, and you find a deposit from one to ten and twenty feet deep. There we get the best peat that is to be found anywhere; and that peat is manure itself.

Now, is not this worth carting on to your lands, which have been robbed of these valuable materials? Prof. Dana, says, in his Muck Manual, that he made experiments over and over again with pure cow manure and with peat, and the results were just the same. That is, not precisely the same, but so nearly, that they need no questioning; and they show us, that it is just as well to go to these peat deposits and take them up to our barns, or on to our lands, as it is to accumulate the droppings of cows, at a much greater cost than peat.

Now what is the result? I see a gentleman before me now who called my attention, two or three years ago, to a field of some fifteen or sixteen acres, as we were looking over his farm one pleasant afternoon, and asked me if I could see any difference in the vegetation upon the surface. Said I, "It is distinct to anybody. Any person who can see at all can see that here is a line just as distinct as can be. On the right hand the herbage is larger, greener, and has a different appearance from that on the left hand side. What has caused it? I suppose you have cultivated and manured that side more than the rest of the land?" "No," said he; "for thirty years that whole field has been manured and cultivated and cropped alike, as nearly as we could do it, and with the same rotation of crops—corn, grass and grain." "Well, then, what can have caused it?" Said he, "Thirty years ago I hauled peat from that meadow on to the right hand side of this field." I think he said about one load to the square rod. Thirty years ago that was done, and there was the evidence of it two or three years ago, and I presume it is there to this day. That peat was used in a crude state, although it was found equally excellent hauled up there, spread and ploughed in.

Then, as an adjunct to your manure heap, there is nothing equal to it. There is no other material which is so valuable. For instance, in the autumn, haul into your barn a quantity of peat that was taken out of the muck hole two or three months before, piled up, and the water drained from it; haul it into your barn cellar and make a large winrow of it in front of the droppings of the cattle, and then cover those droppings every Saturday with that peat, but do not fail to do it. What is the result? Once a week, (twice a week would be better, but once a week will answer very well,) you cover these fresh droppings, liquids and solids, with this black peat; the droppings are thoroughly mingled with this peat, and every spoonful of liquid is absorbed as it falls, and absorbed as it is warm, too, which is very important indeed, and therefore there is no odor in evaporation, or very little indeed, and your barn is just as sweet all the time as this room, although you may have a stock of twenty-five or thirty head of cattle. This is a result that can be shown in many instances in this town. You thus save everything. I would cut all the fodder, and have it fine. When you come

to remove the pile, you can shovel it much as you would cut a large rich cheese. Take a good steel shovel, and cut clear through, and the mass is black as your hat, and rich as anything you can put in the ground. I agree with Prof. Dana, entirely. I am perfectly convinced of the fact, that two loads of peat, mixed in that way with the manure—making three loads, with one load of pure droppings—is equal to any three loads of pure droppings that can be preserved. I have not a doubt of it, from an experience of twenty years, with the most careful observation, and attending to the matter myself. Peat is the most powerful absorbent we have, and, next to charcoal, it is the best thing we can use to keep everything about our premises sweet and clean. As I said before, I hope this matter will be dwelt upon by everybody who speaks upon the subject of manures, for I repeat, I believe the hopes of a progressive and profitable agriculture in these three States, or in portions of them, depend upon the peat swamps which a kind Providence, as the chairman has said (I was glad to hear that,) has kept in store for us.

Mr. CLARK. With regard to the application of manures, I perceive evidence of a diversity of opinion among practical farmers as regards the depth at which they should be placed. Some would plough in their manure four or five inches deep; others would place it at or near the surface. Now, I think in settling a question of that kind, which is one of the deepest interest to us all, we ought to study with a very critical eye the operations of nature. I noticed in one of our agricultural papers, a few weeks ago, a very singular expression, which contained, I thought, a great deal of philosophy, on this point. The writer said that he had been out West, and he noticed that the Lord raised much larger grass than we could, with all our skill, and the Lord never owned a plough, but did it all by top-dressing. That last phrase, "does it all by top-dressing," seems to me to contain a vast amount of practical philosophy on this subject. "Top-dressing" is the method of Providence, or nature, as we say. I think that manures placed near the surface are much more effective than if placed very much below the surface. My opinion on this subject has changed very much within the last ten or twelve years. I used to be in the habit of ploughing in manures, and the deeper the better, I

thought; but I find they did not do anything; I seemed to lose the whole; and for the last few years I have been in the habit of placing them in very near the surface, harrowing them in, or, if I plough at all, ploughing very lightly indeed. I think the chemical operation by which all our vegetables are grown takes place just at the surface of the ground. There is where the air, the rains and the dews act most effectively—right on the surface of the ground; and I believe that a tap-root, like a carrot or parsnip, does not so much draw its nurture from the deep soil below as from the surface. I believe that there is where the process is going on that drives the root down, because there are no little fibres about these things—or ought not to be, where they are raised as they should be—to draw nutriment from the ground, as we say; they are almost entirely smooth, and the smoother we can get them, the better. If they grow at all, it seems to me the process of growing must be carried on at the surface, between the top and the commencement of the root, and it is there where the manure needs to be put. But in raising an elm, we do not want to do that, for the elm has a large top, and the roots run a great distance; though there may be this same chemical action right at the surface also, (and I presume there is,) yet its roots, nature teaches us, draw much of their nutriment at a distance from where this chemical action is going on. My own impression is, that we lose much of our manures by ploughing them in deep. When I came to Waltham, eighteen years ago, I bought twenty-five acres of land, which was not worth anything. It had been occupied by the Lyman family a great many years, and would not bear anything but sorrel, and not a great deal of that. I do not profess to have been much of a farmer, but I have purchased a thousand bushels of grain a year, for the last ten years, to be eaten by my stock; and in addition to that, I have purchased from two to three hundred cords of manure, besides all I have made myself; and now I can raise a thousand bushels of vegetables with the utmost ease, on land that would hardly bear sorrel eighteen years ago. I had a very good crop of corn this year. I do not profess to come up to the farmers of Concord, who speak of raising a large amount of corn to the acre, but I had two hundred and twelve well packed baskets of corn from less than two acres of land this past season. That is

no great amount, but it is something more than is usually raised throughout the Commonwealth of Massachusetts. I think, therefore, that we need to do all we can to make manures, and when we get them, to apply them with the utmost care and discrimination, so as to lose nothing that we get. They are too valuable to be lost, and too valuable to be misapplied.

Mr. HUBBARD. It has been said by Gov. Brown, that there is nothing which requires so much skill as managing a farm, and he has alluded to our muck beds. I wish to ask him one question. Supposing the soil on which he wishes to use his manure is a dark, heavy soil, inclining more to clay than sand, which would he prefer, sand or muck, to mix with the manure to go on to the soil I speak of?

Mr. BROWN. I think that on a granitic soil, generally, I should prefer a certain portion of sand; and yet my experience has been, that even on heavy granitic soils, with clay underneath, the muck has worked to a charm—admirably. There are lands lying near here which would, I think, illustrate that remark. On uplands that are moist, such as we call “runs” in New England, I should rather have a top-dressing of what we find under a granite surface frequently. It is not trap sand; it is flint sand, perhaps mixed with a portion of clay. I should greatly prefer that as a top-dressing. But on sandy loams, and on decidedly sandy land—that is, eighty per cent. of sand—I should want clay, too; but I should begin with peat, until I had got the sandy land colored somewhat, and then, unless clay cost too much, I should certainly add clay. It is really wonderful what may be accomplished with sandy land by the application of a portion of clay.

This discussion is so interesting to me, and so valuable and important as regards getting a good living in this world, that I never know when to stop talking when I get upon this subject. I believe we can enrich any land without applying a spoonful of manure; the atmosphere is at work for us all the time.

Mr. HUBBARD. I speak of this because I know many farmers who have gone to sand holes for the material to make a compost that is better fitted to the kind of soil I spoke of than muck, and they have obtained better results from the sand.

Mr. BROWN. Yes, sir. That land is supplied with vegetable matter already, and they apply sand or silicates.

Mr. THATCHER. I think we are better provided, up in Berkshire County, with these muck beds, or peat beds, than some other parts of the State, on account of our lying between elevations, where have been formed, I think, as Mr. Brown has said, our best peat beds.

There are different ways in which we can prepare peat, and some very simple ways, perhaps not thought of by many. We have now arrived at that point where most of our farmers have underground cellars to their barns. Years ago, when I commenced farming, we did not have these cellars, as we do now. Our stables then were on a level with the ground. Perhaps people now have their stables in the cellars, and do not use, as they may use, this muck to save the urine in their stables. It has been my practice, for twenty years, to take up, twice a year, the floors where my cattle and horses stand, unless those floors are over my cellars, and dig out under them to the depth of two or two and a half feet, filling up under these floors with this peat muck. I remove it in the fall, and also in the spring; at any rate, twice a year under my horses. The cattle not being in the stable so much in the summer, it is not necessary to remove it in the fall under the stable where the cattle are. I can call to mind an instance where I put some of this muck that had been lying under my horse stable six months, upon a piece of grass land, and after I had put it on it looked exactly as if fire had run over it and burned the grass, the muck was so strong, with nothing but the urine from those horses. I put this dressing on after I had taken my crop of grass from the ground, and the next year I had a very heavy crop of grass. I have never experienced any difficulty, and certainly the strength of this muck showed me how much we lose in not using this means to absorb these droppings.

Where I now live I have none of these muck beds, but I have them within about a mile of me, and I have made a contract, within a week, for a year, to draw muck from there, at twenty cents a load, and I expect to haul a large amount this winter, where I can get at it next summer.

Then we have had, near where I now live, a lake, which has been a reservoir, but the dam has been raised, so that it is

spoiled now ; but some twenty-five years ago, when the water was low in that reservoir, we dug down to the depth of eight feet, drawing off the muck, until we got to what we call there, marl, which consisted wholly of fine shell, which may be found in very many parts of the muck beds ; if you take a spoonful of it, and throw it into a basin of vinegar, it will cause an effervescence equal to saleratus. We hauled that off and put it upon the land without any mixing with manure. I know that twenty-five years ago, we drew a large quantity of that marl, and put it on the south side of an orchard, and I think if I could take gentlemen there next summer, they would see a striking difference, notwithstanding twenty-five years have passed since the application was made, in the appearance of that land over the adjoining lands. It was a heavy loam, but it made that land light to work, and we have received the benefit of it down to the present time.

With regard to the application of manures, we may differ, and shall differ, according to our locations, the same as we do about ploughing. Mr. Clark spoke of the elm. I think the corn crop would differ from the carrot crop the same as the elm differs from the carrot crop. There is a growth, which must be a growth of the root, to sustain the stalk running up, which will descend to gain strength to support that stalk, which will give me to understand that I want to put my manure at some depth on that soil, in order that those roots may have a vigorous growth. I do not believe in ploughing deeply for corn, and covering my manure deep, with nothing to make the corn start in the spring ; but if I can have the manure there, so that when these roots start, they shall reach it, and thus gain strength to sustain the stalk during the high winds we have, I think I gain something.

Mr. CLARK. Do not the roots of corn come very near the surface of the ground ?

Mr. THATCHER. Yes, sir ; but you will find that they also extend very deep. If you plough up the stubble, you will find the roots extend down six or eight inches, I think, without any doubt at all.

Mr. WARD. I am situated on a farm sloping to the east and to the south. At the foot of the descent is a basin of some twenty acres, which undoubtedly was once a pond. In that

basin is a peat bed, I can't tell you how deep, for I never have found the bottom, although we have oftentimes dug down several feet, and have never reached the bottom of the peat. There is also on the farm a hill of sand. They are both very convenient to the barn, and to our stables. I have in former years been more in the habit of using peat than I am at present. In the fall of the year, after having cleaned out my cellar, which is forty by sixty-five feet, I cart into it perhaps sixty or seventy loads of just what I please to put in, and I please to put in sand or muck, according as I am going to use the manure on one portion of my land or another. If I am going to put it on stiff or low land, I cart in sand ; if I am going to put it on my light land, I cart in muck, and I put some in my yard where I herd my cows. But I have turned my attention more, of late years, to manuring my low lands and turning my uplands into pasture. My practice in manuring is this. In the spring, I take off the top of my manure heaps, and place it upon my planting ground. I do not plant so much as many farmers ; I do not receive that benefit from the use of the hoe that many farmers do. I usually put on my planting ground some thirty cart-loads to the acre, and our carts usually hold from twenty-five to thirty bushels. My former practice was to plough it in rather deep, but I came to the conclusion that I did not reap that benefit from the manure that I ought, and therefore I now lay it nearer the surface. As time has progressed, I have been laying it nearer and nearer to the surface. I am now getting out of the way of the hoed crops, for the reason that I cannot make them pay, and I have this fall laid upon my old fields—fields that have been cultivated fields, that bear what we term herdsgrass or timothy—about as much manure as I would if I was going to plant corn. I think I shall receive more benefit from my manure in that way than from a hoed crop. Root crops I have nothing to do with ; they are a hoed crop, and I cannot make them pay.

My cattle stand on each side of the barn, my driveway goes through the centre, and I have a leanto on each side. I have often noticed in the spring, when I have had sand in the cellar through the winter, that the liquids that have passed down through the floor have so saturated that sand that it is discoloured clear to the centre. Although it may be clean, good sand

when it is carted in there, when it comes out it is all discolored ; and oftentimes I find a puddle of urine that has worked out from the manure heap in the centre of the cellar. Now, when I prepared my cellar, I cemented the floor, and there is no leakage, and the liquids are all retained. I value the sand that is filled in that way quite as highly to go on my low lands as I do the droppings from the cattle.

There are various ways, as has been suggested, in which the farmer may increase the quantity of his manure. I was rather surprised myself, this last season, at the effect of certain manures upon the ground. I ploughed up a piece of ground of about two acres, and carted on about thirty loads to the acre, and at planting time I took the hen manure that had been made during the year and dropped it into the hill—perhaps as much as a man would take up in his fingers. What my hens made during the year carried me over an acre of ground, perhaps. When we came to use this hen manure, I put in three rows of potatoes through the field, and planted the rest of the field without anything in the hills ; but the field otherwise was treated all alike. Upon gathering the crop, we estimated that we got sixty per cent. more where the hen manure was put than where it was not put. You perceive it was a very great increase in the crop—altogether from the use of that hen manure. That might have been increased in quantity, as suggested by the chairman, by scattering loam or something under the hens at the time of the droppings ; but there was a query in my mind, when the remark was made, whether it would be any essential benefit. We should be simply carrying dirt to the hen-roost and carrying it back to the field, and it would require a greater quantity when the manure was put on, so that we should lose the transportation. All the good qualities of the manure were retained in it, and we could not get any more than that by putting in the dirt.

All the manure that is dropped by my cattle and horses goes directly into this cellar. I am not in the habit of housing my cows in summer ; I let them lie in the yard, where they have shelter, and there they make something like a hundred loads of manure during the season. That goes to my grass, also, and my hog manure I put upon my cornfield. I think that is far better than what we could make at the barn for increasing the

growth of the crop. It is a strong manure—made from better substances.

Mr. CLEMENT. There is one other subject about which I wish to make an inquiry. It is in reference to gas lime. It is simply oyster-shell lime, through which the gas has been strained. It has a very offensive odor, and is very powerful in something poisonous. I do not know whether it is worth carting. We can buy this in the city at a merely nominal sum—a cent or two cents a bushel. I have used a thousand bushels one year. I spread some of it on grass land, and my man was not sufficiently careful when he distributed it, and some of lay a little too thick and killed the grass. If you throw a little round bushes it will kill the foliage, and if you pile up a heap of it, it will kill the foliage on trees twenty feet off, on the side next the heap. There may be some gentleman present who can give some light in relation to that, so that we may know whether to use it or not. I have not tried enough experiments with it myself to enable me to determine accurately whether it is worth purchasing and carting it out of the city three, four or five miles.

Mr. THATCHER. What is your idea?

Mr. CLEMENT. My own idea is this. I don't think I derived much benefit from it where I spread it upon grass, but I did derive benefit from it upon land planted with potatoes. I should say seventy-five bushels is an abundant dressing for an acre, and you see the expense is but slight. I thought the potatoes were better, but I tried it only one season. Of course one experiment of that sort will not enable any one to determine accurately. I would not say, distinctly, that it was a benefit, but I think so. I will say this, also, that in working the soil since, I frequently turn up a little lump of this shell; it is now pulverized; it is not shell. It is not much pulverized at first; there are a good many shells, at any rate, but these soon crumble to pieces. I have certainly got the impression, from my reading, that oyster-shell lime was valuable in many respects as a dressing for crops; and I had hoped that I might hear from some gentleman present who had had a larger experience with it, who could give us the details, which would enable us to determine more accurately in relation to the value of it.

Mr. SMITH. A neighbor of mine was accustomed to use this gas lime for quite a number of years, and I had the testimony from him that he used it with good success. He used to apply it to his corn lands and to his grass lands, being careful to spread it thin, as my friend Clement has mentioned, because it will destroy the grass if applied in lumps. But he does not use it now. I was induced through his influence to purchase a quantity of it, four or five years since, because of its not costing much, and put about a cart-load of it upon an acre, but I have never seen any advantage from it. I am of opinion that I either applied too much, or else it is of no benefit. I am of opinion, and I have heard the same opinion expressed by others, that no benefit is gained by the passage of gas through the lime; that if there is any advantage in it, it is because of the lime nature which it contains, being oyster-shell lime.

Mr. CLARK. About six years ago, the gas company in Waltham offered me a large quantity if I would take it away. I thought they made me a grand offer, and sent my man over and got a large quantity, and put it on my land; and that is the last I have seen or known of it. I don't think it does any great good.

Mr. SMITH. One of my neighbors put it on a piece he was going to sow with onions, and I tried it myself, and neither he nor I were able to obtain any onions, because it was so strong that the seeds would not germinate. I did not put it on so bountifully as I did on the other piece.

Mr. THOMPSON. I have seen this gas lime tried for a number of years, and the operation of it was injurious to the land. The only use made of it in our place is to put it on roads to make them hard; it is very fine for that. We have composted it with different kinds of material, but never found any good effects; it has always been more or less useless or injurious.

In listening to the gentleman on my right (Mr. Ward,) who spoke about discontinuing the use of peat, and taking up the use of sand, as a material for composting in his cellar, it occurred to me that if he had used his peat in the proper places, he would have had good results; although I would use peat myself anywhere as a compost with manure. As Mr. Brown said this morning, I would rather have two loads of peat mixed with one load of clear excrements from the cows, than have

three loads clear from the cows. It may be that we would apply the cow manure too thickly, and thereby it would be injurious to the crop ; or, if you put the cow manure very near the surface on ploughed lands, if it is very rich, not composted well, you will find it will dry up, and there it will lie inert, and your crop will be very little benefited by it the first year, at any rate.

It seems to me that this use of sand is only the loss of one carting. If you cart it into your barn cellar, you have got to cart it out again, and we all know sand is pretty heavy to cart. It may be an absorbent, and may be beneficial, but we find in our neighborhood a yellow loam that is immediately below the surface of the pure, white gravelly sand, two or three feet, and cart that on to our meadows, and it is almost as good as manure. I have driven by, all summer, two lots, belonging to one man, one of which he manured with barn manure, and the other with sods, which he stole from the waste land—of which there are thousands of acres in the neighborhood. They are grand mowing lands, and on one he carted this poor, sandy soil, which is on high lands, which you would think would not support the grasshoppers, and he had as good a second crop upon that piece as he did upon that next to it, which he dressed with barn manure. If that be a fact, what is the use of carrying the soil into the barn cellar and then carting it out again ? I would cart all but very rich sods in as absorbents, but I don't think it is of any great benefit to cart sand into a barn cellar. I would put it upon the meadows without carting it in ; then I would compost my manure with peat muck, which is valuable in itself, and if I had any high land, put that on, and it will produce as good a crop exactly as if it was all clear cow manure. For instance, I have in my mind a spot of land of half an acre, that three years ago was barren sand. Right below it, ten rods off, is a peat hole, in a very beautiful mowing lot. The man digs some of that peat out every year, and carts it across the highway upon this barren sand to dry, and that lot, in three years, has come into mowing, and gives a good crop. Nothing in the world but muck has done it. That strikes me as evidence that peat is very valuable. I think it is the best material to compost with that I have ever seen. My method is to collect the peat and compost the

sods and seaweed from the first day of January, to the last day of December. I am satisfied that by next spring, I shall have made six hundred loads. I have carted seaweed when a man could do but little else but cart seaweed. Well, I bought a farm that had been partitioned off by fences into small lots, and those fences I removed. The old custom always was to plough toward the fence, and of course it has made ridges three feet high and five feet wide. When I removed the fences, and made the lots in a different shape, these came right in the way of the mowing machine; and if I undertook to plough, they would be very poor places to plough over. Consequently, I have hauled them off into the hog-pens and the barn cellars. This fall, I have collected hundreds of loads of sods from those ridges into a heap, to have it ready when I want it hereafter; for we all know that for many vegetables and plants, and grape-vines, rotted and decomposed sod is the very best material that can be found—much better than any manures. For strawberries, I know it is better than any ammoniacal manures.

It seems to me, from my experience, that farmers should always be collecting everything in the nature of manure. I throw but little peat into my hennery, but I have the manure taken out frequently and composted with peat and covered peat over it, so as to save it all. I do the same with the contents of my privy. It is about seven feet long by twelve feet wide, and so placed that everything runs out of the vault but the solids; and therefore I throw in peat every little while, and once or twice a year it is taken out and composted. I make every year enough to manure a whole acre of land—as much as I should have to pay fifteen dollars for if I bought guano. You can make ten dollars worth of manure a year from twenty-five hens, if you have the peat or good rich sods such as I have to compost with it. We all know that if we can make a load of manure, twenty bushels, it is worth a dollar or a dollar and a half; and we know that if we do not have this manure we have no vegetables. The gentleman spoke about root crops. Of course we want to raise a root crop and a hay crop, and that is about all. I can buy corn cheaper than I can raise it. I can raise roots equal to nine tons to the acre—certainly that is a paying crop—when I can raise but three tons of hay to the acre.

My roots have cost me nine cents a bushel, and they are certainly a valuable crop. But unless you manure well you do not get a root crop. You want to plough first and then put the manure on, two or three inches below the surface, then plant your seeds immediately, and you have the effect almost instantly upon the seed as it germinates, and it does not seem to lose that growth. There is a stimulus in it when it is so near the surface. The light and heat of the summer sun are acting upon it and the surface soil to such a degree that you have a thrifty growth of leaves all the time. I have grown ruta-bagas this year on a piece of clear sand that has accumulated on the south side of a fence until it is four feet high the whole length of the fence. I ploughed there and put on a good coat of manure, and I have had ruta-bagas six or seven inches in diameter this year.

Mr. THATCHER. Will you be kind enough to state how much stock you have, to make those six hundred loads of manure?

Mr. THOMPSON. Twelve head of cattle, three horses and about twenty hogs—that is, grown hogs and pigs growing all the time. We have carted in everything we could get hold of; everything that would be called refuse round the barn and farm.

Mr. THATCHER. I must say, that if the statements are true that have been made here this morning, in regard to the quantity of manure that may be made, we farmers who are outside the peat bogs are exceedingly unfortunate. It does seem to me that the question is, not the quantity of manure that we make, but its quality. I know that it has been stated here, by pretty good authority, that one cord of solid excrement from a cow is worth no more than one-third of that cord, composted with two-thirds of a cord of peat; but it seems to me, if I were offered my choice between a cord of solid excrement from a cow stable and a cord of manure composted in the way I have spoken of, I should prefer the former. I know this much, that for all heavy crops that are raised, at least in our part of the country, the less there is of compost about the manure the better. I do not want my manure composted if I am going to raise a big crop of anything; I do not care how near it approaches the solid excrement. I never have found the trouble to which Mr. Thompson alluded, of its drying up when it is turned into the

soil. The idea suggested by Colonel Ward was significant. He said he might have made more manure from his hennery—he might have increased the quantity—if he had been so disposed, but he did not think it worth while; he thought he should not get anything more by putting loam in there and carting it back to the field, than he would if he carted the manure out without it.

Mr. SLADE. Mr. Thompson tells of making six hundred loads of manure from the amount of stock that he keeps. I keep about half as much stock, and I cannot make three hundred loads of manure; if I make one hundred loads of what I call manure I feel pretty well satisfied. I know I have neighbors who make twice as much manure from the same amount of stock, but it does not tell on the growing crops; and my idea is simply this: that farmers perform a great amount of labor which does not pay them, in carting in and carting out. Now the use of Peruvian guano proves very conclusively that it requires but a very small quantity of the right kind of manure to produce a crop. Take three hundred pounds of guano and scatter it over an acre where you sow rye and oats, and you will see its effects immediately and magnificently. How much of that guano lies on a square foot of the surface? Now, to produce similar results from a compost heap, a man must take a team and work all day, and then perhaps he will not do it.

During this discussion, a conversation occurred to me that I once had, with a very intelligent gentleman in Bristol County, a very extensive raiser of premium crops of corn—Mr. James Leonard, of Taunton. For quite a number of years he has competed, and always successfully, for the first premium on a crop of corn. He has succeeded in raising one hundred bushels to the acre. He has raised two hundred and ninety bushels to three acres, and has never entered for a premium when he did not raise over ninety bushels. Some neighbors of his, in an adjoining county, with a better soil than he had, were very anxious to raise as big a crop as he did, and tried it year after year, without success; and finally, two years ago, one of them came to Mr. Leonard and requested of him the secret of raising his corn. Well, he told him just how he did it. Said he: "Your land is as good as mine, if not better; I use so much manure to the acre; I plant such a kind of corn; and my mode

of tillage is thus and so." "That corresponds," said the gentleman, "with my mode, and I don't understand why I can't get as good a crop as you do." Well, he told him he didn't know. A year ago last spring he was invited to go over to one of the Bridgewaters, where the experiment was to be tried for a premium crop. As soon as he got there, he says he told the gentleman: "The secret of your failure is simply this: it is not in the kind of corn; it is not in your mode of culture; but it is in the manure to which you resort to carry that crop through." Said he, "You make your manure; it is made from the droppings of your cattle and what you put into it. What you put into it is not manure. I buy my manure; it comes from such a stable in Taunton, and there is nothing in it but the droppings of fatted cattle. You use just as much as I do, and when you will use the same kind of manure you will produce just as big a crop of corn as I do." I believe that.

Mr. JOHNSON. I am one of those fortunate individuals who can agree with almost everybody here, and it is because my soil is so varied. I perfectly agree with the idea advanced by the last gentleman who spoke, and also with Mr. Thompson.

If I could have all the sand that I would like in my compost heap for my clay soil, I would have at least one-half sand, and prefer it to the manure. I have tried manure upon that clay bottom, spreading upon the top, side by side with it, clear sand and the washings of the road (which was sandy,) which had been collecting for years, and which contained a mixture of vegetable matter undoubtedly, which had collected there, and made a black deposit. I spread that upon that meadow (as we will call it,) and more grass was grown from the application of that soil than we ever got from the application of compost from the manure heap. Not more than a fifth part of that compost heap would be the collections of the soil. Yet it grew more grass and it lasted longer than the manure did. Now, I proposed, a week ago, to buy an acre more of that sand, to cart on that meadow this winter, and I would rather have it than to have stable manure to go on that land.

Then, again, if I am going to cultivate any class of soil that we have, I prefer nearly clear manure. I do not want to cart the dirt from the field, and run the manure through it, and then cart it all back again. I see no sort of use in it, except to

hold the urine ; and that is sufficient ; there we get a good mixture. But in the other case, I want the sand ; I don't want the clear loam.. There is some property about the sand which produces grass there. So that I can agree perfectly with the last speaker, and with Mr. Thompson.

Then, again, we cannot tell exactly how much dirt or sand to mix with the manure until we see the soil ; then we can judge pretty nearly how to mix it. That seems to me the only safe way. As my friend Clement said, this discussion is to go out to the public, but it decides nothing. Can we decide anything ? I do not see how we can decide anything, or settle the question how deep we are to plough, how much peat it will do to put into the soil, or anything else. I have no peat. My neighbors have it, and have used it pretty extensively, but they have left off using it now, the expense of carting has got to be so heavy. We have to pay two dollars a day for labor, and it costs so much to cart the peat that they have given it up. It is used mostly for orchards. One near me, consists of two hundred and fifty trees. They have been in the habit of tipping up peat on that ground, and now it is stocked down with clover, and produces very heavy crops. It has had no manure whatever for twenty years.

Mr. SMITH. I wish to make a statement to correct what I have said before. I think I said I applied gas lime to one acre. I should have said two acres instead of one.

Mr. DAVIS. I merely rise to corroborate, so far as my opinion goes, some of the remarks which have just fallen from Mr. Johnson. It seems to me that the more important question for us, in regard to manure, is, the kind of manure that is to be applied to particular soils. I merely wish, in that connection, to state my experience upon that matter. I have a peat meadow, where the peat is some twelve feet deep. A few years ago, when a portion of it was laid down, being ploughed once, I put some gravel upon it, and got a heavy crop, which in two or three years fell off into fine, very thick set meadow grass, without stamina, very hard to cut ; it could not be cut by the mowing machine, on account of the fineness of the grass and its want of stamina. I thought this want of stamina was entirely owing to the want of silicate in the soil ; and in order to test the matter, as far as I could, I last year put on a heavy dressing

of green barn manure. That added, of course, to the growth of the crop, but the same difficulty was found to exist this year. It was fine, and hard to cut. I have now covered it with fine sand, which I think will be of more effect than manure, for land in the condition which that is in.

It seems to me, sir, that that point, the application of the proper manures to particular soils, and the application of various soils as manure to other soils—is one that is not sufficiently dwelt upon by us, or sufficiently considered by farmers. I have had the same experience as Mr. Johnson in regard to putting peat upon uplands. I find it is better to put on even the poorest peat, and let the sun and air act upon it, rather than not put on any at all.

It seems to me that something might be said with regard to the formation of compost heaps, so universally recommended. I know it is dangerous to say anything which may be misunderstood, with regard to composting, but I think the matter is generally misunderstood. My experience with regard to compost heaps—I mean, composting barn manure with peat—has led me to the conclusion that it is altogether useless work; that with the present cost of labor in this country, and more especially in this portion of the country, it does not pay. I have come to the conclusion, that next to top-dressing, which on most soils is the cheapest mode of manuring, the application of green manure, ploughed in, and peat ploughed in, leaving the composting to be done by the action of nature, is just as effectual as the formation of compost heaps, with the recommendations of which the agricultural papers are filled. It seems to me we do not discriminate enough, and that one-half the compost heaps recommended are a mere loss of time.

Adjourned, to meet at 3 o'clock.

AFTERNOON SESSION.

The Board met at the hour appointed, Mr. HYDE in the chair, and the subject of Drainage was announced as the topic for discussion.

DRAINAGE.

Mr. BROWN. As I hinted this morning, in some remarks which I made here, this subject of drainage is one of great importance to us as farmers, and one of exceeding interest to

everybody, whether farmers or not. We have with us a gentleman who has had a great deal of experience in laying drains, and who has written a work on the subject which I think most of you may have read with pleasure and profit, and I would be very glad to have him speak upon the subject. I refer to Judge French.

HENRY F. FRENCH, of Concord. Seeing the subject of drainage announced, I came in, hoping that I might gain some information, as I have recently recommenced my agricultural life by purchasing a farm in this neighborhood. I was not aware, until now, that I should be called upon to speak. I have no objection to talking upon the subject, because, as has been said, I have given to it a great deal of attention, both theoretically and practically. When I went to England, ten years ago, I was charged by the person who then had charge of the Agricultural Department at Washington to collect information upon that topic, and I went out of my way a good deal to make the acquaintance of drainage men in England, engineers and the like, and to visit the best specimens of drainage that could be found in Great Britain. Since then I have been constantly at work upon the subject. I have always owned land, and have constantly been practising. It is a subject that one can hardly be expected to take up in a general way ; and if any gentleman will suggest what particular topic connected with drainage he would like to hear discussed, I should be very glad to be directed in that way.

Mr. BROWN. I think the first thing we need to know in regard to drainage, is what kinds of land need drainage? Some persons say, if you drain a sandy piece of land, you not only do it no good, but harm. I think that is a very important question, at the outset.

Mr. FRENCH. Some people, I think Horace Greeley is one, are of opinion that all lands would be benefited by draining. I am inclined to think that is not so. Where no stagnant water stands during the whole season, that land would not be benefited by drainage. Any land, in which water stands at any season, stagnant, within two or three and a half feet of the surface would be benefited by drainage, somewhat. One of the chief advantages is, that you lengthen the season. I am speaking of New England, where the season is short, and we

have not time enough to do our work. Whenever your land is wet in the spring, whenever you are late in ploughing, your land is benefited by giving you additional time. I had a piece of land in Exeter, N. H., lying on what looked like upland—a springy hillside—so wet, that cranberries grew and ripened there every year. That land, on which no crop would grow, I drained four feet deep. It was sand and clay, mostly sand, but coming down to clay after awhile. That land is now some of the very earliest in that part of the country. The effect of drainage upon land of that character is very valuable. The water is not only taken away from the surface, but it is taken out of the subsoil, so that land which has been wet and miry heretofore, will be dry as early as any land you have;—not, perhaps, so warm as sandy land, but as early, and that is a great advantage.

Now, besides the merely mechanical effect of composting the soil, and making it so you can work it, you gain an advantage in another way, in the warmth of the soil. You know perfectly well that heat does not go downward in water. You cannot heat water by the application of heat to the surface, in any way. You may put a hot fire over a vessel of water, and keep it there until the water evaporates, and you will not warm the bottom. Heat is propagated in water by the movement of the particles. You warm it at the bottom, and the heated particles rise, and the cold ones fall. Two particles of water do not impart any heat to each other by contact; it is merely by motion that heat is propagated from the bottom. Your soil, being full of cold water in the spring, of course you may have ever so hot a sun upon it, but no heat goes down; you may have a warm spring rain, and it may lie on top of the ground, but it will not warm the water in the ground; it cannot; there is no motion there. Whereas, if you have an under-drain, four feet below the surface, when the winter begins to break up, the cold water falls and goes off, the warm water that comes down in rain takes its place. You lengthen your season in that way, and you will find that an advantage in every respect.

That, perhaps, is not a direct answer to the question that is suggested, What lands require drainage? but it suggests that a great many lands that are ordinarily not thought to require drainage will be benefited by it somewhat. Of course, it is not

always advisable to do it. It is often a question whether it is worth while to drain land, upon which you can raise a crop of grass, for the purpose of putting in other crops. There is a great deal of low land that will yield a very heavy crop of grass, that is not fit for corn land or for market gardening. But if you want to put in corn, or make a market garden, you can do it. You can drain that land and drain it so that you can plough it early. Whether that land requires drainage, can be answered by asking another question, "What do you want of it?" Whether it will pay or not depends upon the locality of your market and the value of your product.

In all land that you desire to plant for corn or for market vegetables, the water should be out so that you can work it in the spring as early as any land can be worked, and so that it will keep dry until it is frozen, so that you can go on with cattle and horses in the fall. Upon the point, whether drained land freezes more or less than land undrained, I will say that I have no doubt that drained land freezes deeper than land not drained; and for this reason. Land that is wet is ordinarily supplied with water from springs, and springs are warmer than snow. That is, they are above the freezing point, and they generally keep those swamps and springy land from freezing deep. If you take the water out four feet deep, very likely the frost will go much deeper than formerly. But one thing has, I think, been fully ascertained, that the frost will come out of drained land much earlier in proportion to the depth of frost, than undrained land. Undrained land freezes much more solid, there being a great deal more water in it, than drained land, and it takes longer for it to come out; and besides, immediately, when there is any movement of the water below, the moment there is any thawing, it thaws at the top and bottom both, and usually the water will be out at the bottom as soon as it is out at the top. I am speaking now of lands that are not springy. There are lands so full of springs that they remain comparatively open all the year. In fact, many swamps do not freeze at all.

Mr. FLINT. There is a question I would like to ask Judge French, now that he is up, in regard to the most economical method of side-draining in low, marshy lands and wet meadows. I suppose it is generally considered that an open centre ditch is

the main thing, but it often happens that in addition to that it is necessary to have certain side ditches, so as to lead the water at a distance to the main drain ; and in order to avoid inconvenience in ploughing and handling the land, it is desirable that these side ditches should be covered, if possible. Now the question in my mind is, how we can most economically construct these side ditches to lead into the broad, open ditch on a wet meadow. Supposing a man had a sufficient quantity of large flat stone, as is the case on the formation which geologists call gneiss, near at hand, which can be easily handled, and which sometimes a man wants to get out of the way, would it be practicable or economical to lay these flat stone at the bottom of a ditch, supposing it to be of soft mud, and then set up stone edgewise, one upright and another leaning obliquely upon it, the way we naturally would in building a drain ? Whether there would be much liability to sink ; whether that method would be practical and economical as compared with the attempt to lay tile drains ; or, if tiles would be better, what would be the best way of laying tiles under such circumstances ; whether they should be laid on scantling or not, or in what other way, so as to secure their permanent efficiency ?

Mr. FRENCH. My first proposition, in answer to the inquiry, would be, that I would never use stone if I could get tiles at a reasonable price. I never would use stone on my farm if I could obtain two-inch tiles for \$15 or \$16 a thousand, delivered. If the stone lay on the ground, I would haul them away and use the tiles instead. I could demonstrate to any person who would give me his time and follow my mathematics, that it is cheaper for him to pay \$16 a thousand, or a little more than a cent and a half a foot for the tiles, than to use the stone that are lying scattered on the field ; that he can pick up the stone and take them away cheaper than he can open ditches, lay the stone and cover them in, because the labor of excavating a ditch for a stone drain is more expensive than the whole expense of excavating and putting in tiles, and the labor of laying stone is much greater than that of laying tiles.

Mr. FLINT. That would be the case on hard soil ; but on peat soil, you would have the material, which you would want to use. That objection would not hold so strongly where the farmer wanted the material for top-dressing.

Mr. FRENCH. I think a person accustomed to use a mowing machine would avoid all open ditches, if he possibly could. I think nobody who has had any experience in ditching would leave an open ditch, if he could have the surface smooth. There is once in awhile a large meadow where you are obliged to have an open centre ditch ; but it is not often that there is a place where five-inch tiles, or two perhaps, laid side by side, will not carry all the water off. It is not often, therefore, that you are obliged to have an open ditch. All this land which lies full of open ditches, can be covered up as even as this floor. You had better take up the earth by the shovelful, from the general surface, than dig it out of the ditches.

The way I would drain is this. In the first place, get a centre ditch through the middle of the lot. That may be an open drain, if you cannot do any better. Then you want to run your side-drains up the slope, without much regard to anything else. Don't undertake to cut off the water as it comes down the hill, but run into the hill ; then you are always lower than the water. Have some regard to system, because you want maps and charts of your drains, so that you can find them. Use tiles, if you can get them. I have generally put in a board at the bottom where the ground is soft. You will avoid this necessity, if you can strike the bottom of your peat, as you generally can by going four, five or six feet deep, and by getting one drain below the bottom of the peat, you will sink the whole meadow so that it will be compact enough to bear your tile. But I have never seen any land so soft that tiles would not lie well enough upon a board six or eight inches wide. You can use any kind of old boards that you happen to have, put them in in that way, and cover them up. The objection to using stone, besides the expense, is, that you cannot make perfect joints, especially in land that is soft ; you will leave open places where you can put your fingers in. You cannot help it. You might with brick and mortar, but otherwise you could not exclude the mud and silt that comes in with the water, and the moment that gets in, your drain is done. With tiles, where the ends are fitted carefully together and the joints covered, you have something that will exclude the mud, and you can ordinarily keep the drains open ; and I should very strongly recommend to gentlemen to buy, as I and my neighbors are

doing, tiles, even at a cost of twenty or twenty-two dollars a thousand for two-inch tiles, rather than undertake to use stone. There is a great deal of difficulty in working on that land with stone. In the first place, you have your stone to haul there. Well, four oxen, with a cart, can carry but a very small quantity of stone on an ordinary undrained meadow. It will take several cart-loads to make even one rod of stone drain in almost any meadow ; whereas, with a wheelbarrow, you can carry tiles enough to lay six or seven rods. The tiles weigh about three pounds apiece, and one hundred of them will go a hundred feet. Ordinarily, you do not have stone on these meadows. You may have it in the neighborhood, as Mr. Flint says, but all land does not afford you stone on the surface.

A MEMBER. How deep would you lay them ?

Mr. FRENCH. I would lay them four feet deep, if I could get them in. That is one thing that it is almost impossible to make farmers believe, or practise ; and for this reason, that they will try draining by laying their drains two feet deep, and they say they drain the land enough, for no man ever laid a drain through a piece of land that he did not see the benefit of it. If he does not go deeper than a foot and a half, he is amazed to see the improvement he has made ; if two and a half, he thinks that is enough. That is one point that has been dwelt upon very much by English engineers, and there is but one opinion about it in England. I think the best drainage engineers all advise, as a general rule, the putting of tiles four feet deep, if you can get a fall that will carry the water away. The advantage is, not that you want to carry the water off four feet below the surface, because the crops would grow well enough if you kept it two feet below the surface, but this is the advantage : we have sometimes a rain-fall of three, four or five inches in twenty-four hours ; it is not an uncommon thing to have two or three inches, and I think we have had, in one instance between five and six inches within twenty-four hours. In England, one inch is an extraordinary rain-fall. We have twice as much rain as they do. In the middle counties, they have twenty inches ; we have forty and forty-two. Now, suppose you have a piece of land in which you have laid tiles four feet deep. In a dry time, all the water that will run off has settled down to that depth. After a long drought, there comes

a rain-fall of three or four inches in twenty-four hours. You have four feet of dry soil. The rain goes all through that soil, and it will hold it, without leaving any on top. Now suppose your drain is just two feet deep; you get three or four inches of rain-fall; the water is within two feet of the bottom of your tiles, and when the rain begins, it fills you right up at once, and floods your potatoes or corn which you have just planted. It will stand two or three days, and your seed is all rotted; whereas, if you had gone two feet deeper, the soil would have been dry enough to have held all this rain-fall, and you would have saved your seed. In this regard, it is very important to get your drains deep. And then, they are out of the way of the subsoil plough, out of the way, substantially of the working of moles and mice, and out of the way of roots. And that is a point of very great importance. You will find practically (and there are some gentlemen here who know about it,) that drains are very often obstructed by roots; even tile drains, laid just as close as you can get them, and four feet deep. I have seen the roots of the trees in an apple orchard running to any extent inside a drain—little fibrous roots, that go like the air, anywhere. Even mangold wurzel roots have been known to go into tiles laid four feet deep. They get in through the cracks, and if you put your tiles in only two feet deep, you would be very likely to get your drain stopped up by roots.

Mr. KEYES. What is the lateral effect by increasing the depth of a drain?

Mr. FRENCH. It increases the effect laterally. Water always seeks the lowest point. Gravity carries it down. You dig a hole in the ground, and all the water in the neighborhood tends down to it. It goes to the lowest place. You dig a two-foot drain, and a four-foot drain beside it, and the water all goes into the four-foot drain. The four-foot drain runs the soonest, and the two-foot drain will carry no water unless the four-foot drain is full. The deeper a drain is, the further it will drain, because the slope is moderate throughout the bottom of it. Of course you may get a drain so deep that it will not drain the surface at all. I think the English authority is satisfactory upon the point that four-feet drains, even in that climate, where they have less rain than here, are attended with the best results; although I will state here—which I have had occasion

to show by pretty careful mathematics elsewhere—that it costs twice as much to dig a drain of four feet as it does to dig one of three feet, for the reason that you have to open your ditch wider at the top, throw out more earth, lift it higher, and ordinarily it will be harder to move, and you work at a disadvantage. Still I have practised, as far as I have been able, putting my drains fully four feet deep; and I have, in my Exeter farm, found them wonderfully successful. Before I tried tiles, I tried all sorts of things. I tried bushes, and loose stones, and flat stones, and in all these ways I had good results temporarily. For a while they would drain sufficiently, but in a few years they would fail by getting filled up.

Mr. KEYES. A single question further. How near together should side drains be?

Mr. FRENCH. Of course I give nothing but an approximate answer to such a question. From sixteen to sixty feet would be given as the outside limits. In England; in clay lands—and that means clay in England; it does not mean what we call clay around here sometimes; it means blue clay, or brick clay—in such lands they sometimes put their drains as near together as sixteen feet. On ordinary loamy soil, or in peat swamps, I think you may put your drains from thirty to forty feet apart, and be pretty sure of good results if you get them four feet deep. I think that is ordinarily near enough. I have put drains in forty feet apart that have done excellently well. The deeper they are, within reasonable limits, the further apart they may be. In clay lands there is a singular effect produced by drainage, which I have witnessed myself, and writers on the subject speak of it. You may take clay land—brick clay—that will hold water, and put drains into it four feet deep, and in two years' time it will become full of cracks, so that the water will pass readily down through it; you will not find half an inch square that has not a crack in it; and this clay land becomes open, friable, so that its character is entirely changed.

The worst obstacle you will find will be from the drains filling with what writers call “silt,” by which they mean a very fine sand—clay, so fine that it will pass almost anywhere where water will pass. I think people who have failed (and I don't think there are many,) in tile drainage, have failed by not being careful enough in securing the joints or in selecting the tiles.

They are generally a little crooked; and when put together will leave places that you can put your finger through. These places should not be left open. In clay soil or sandy soil a crack as large as a quarter of an inch should never be left. If you do leave such an opening you are very likely to have something work in that will obstruct your drain. But the obstruction of drains by filling depends very much upon the slope. It requires a great deal of care to lay a drain where there is but little fall. You may lay a drain well enough with five or six inches fall in a hundred feet, if you will lay your tiles with a continuous slope. If you have water running in your drain when you are laying the tiles you can lay by that. But, ordinarily, you should engineer more carefully than that. You should draw a chalk line above the drain and keep the slope by measuring downward from that. If you lay two or three by guess you will be surprised to see how much you get out of the way—frequently two or three inches, without perceiving it at all. If you rise but two inches, and sand enters, it will most likely fill up until the drain is completely stopped; whereas, if you have a continuous fall, ever so little, it will keep itself clear.

Where I could get spent tan from a tannery, I have generally found that as convenient as anything to cover the joints. Throw a shovelful upon the joint and let the men tread it down. If you cannot get that, get turf, and press it down and secure the joint in that way. The object is to secure it, in the first place. All the water that comes in is merely what soaks in at the bottom. If you can once get your drain fairly in and the earth packed down and settled, there is no difficulty afterwards about their filling. The great difficulty is, that you put the tiles in carelessly, and the first heavy rain that comes breaks in from the surface, and you meet with your misfortune generally very early in your experiment.

A MEMBER. Would not sawdust answer as well as tan?

Mr. FRENCH. I should think it would. There is this advantage in using this kind of material, that if it gets into the drain, it will float out. It is very objectionable to pack in a parcel of loose stones about the tiles, because that merely keeps an opening above them, which is just what you do not want. There is one thing you may depend upon—you cannot keep the water out of tiles unless you cement them. You may put on any-

thing, even puddled clay, and you cannot keep the water out, because that will soon crack and let the water through. The question every man asks about tile-drainage is, "How is the water going to get into the drain?" I can say, from my experience, as well as from reading, that if you can keep the earth and sand from getting in, the water will take care of itself.

The only form of tiles made here is the egg-shaped tile, flat on the bottom. No doubt the round tiles are better, for this reason—that you can turn them over and fit them better; but they are not made here. I have never seen any in New England. I have seen some in New York, where they are used in the Central Park.

A MEMBER. Have you ever used cemented tiles?

Mr. FRENCH. I never have. I never have seen any used for draining land. I saw some in Hadley used for carrying water from one place to another, but not for the purpose of draining land.

A MEMBER. Do you know whether they are manufactured at Northampton and Springfield? I have heard, lately, that there were some manufactured there.

Mr. FRENCH. I know nothing about that.

Mr. MANNING. I recollect once building a stone drain in a piece of land where was, generally, only a foot and a half of mud, though in some places it was four feet deep. In digging down into that, it would cut off readily, but in some places it would cleave off and fall in. I put in a stone bottom and stone sides, and laid stone over it and covered it, about a foot and a half from the surface; but the sand kept constantly running down, and in a little while there was a place where it caved in at the side; and finally the stone washed away and it caved in.

Mr. FRENCH. As experience is always more satisfactory than theory, I will say that I had occasion to lay a drain through a piece of land that looked on the surface like dry land. I put in four inch tiles mainly, and there was a run of water that filled this drain full, and I had to put in plank to support the drains in order to get the tiles down. I laid this drain in 1852 or 1853, and the last time I was there, the whole thing was working just as well as it did originally. I should not expect that stone could ever be used, in a place like that, so as to exclude sand.

Mr. BROWN. I should be glad of an opportunity to say a few words in relation to this subject, because it interests me greatly. The effects of drainage upon soils will be as surprising to persons who have not looked into the matter as any operation of the farm in which they have ever engaged, and, I am inclined to think, more so. It is one of those curious operations that sometimes work by contraries. In the first place, it makes cold land warmer; in the next place, it makes wet land dryer; in the third place, it makes dry land more wet; in the fourth place, it makes heavy land light; and, in the fifth place, it makes light land, in some cases; I believe, a little more compact. Now, if that is not working by contraries, apparently, I do not know what is.

In the first place, I say, it makes cold land warm. You will all ask me how. There is nothing that the roots of plants dislike so much, probably, as to stand over stagnant cold water, and if they can by any possible means run away from that cold water, they will do so. They will follow almost any course to escape going down into that cold water. Now, in the case of a drought, you will find that the plants on low, wet lands, fail the soonest; just where people who have not looked into the matter would suppose they would fail last. After there has been a drought of two or three weeks, if you look into what are called the low runs, you will find that the young maples and some other trees—the black alders, perhaps—are shedding their leaves. And why? Because the young maple grows on wet land, where the water is cold underneath, and stands within a few inches of the crown of the root; and it never throws a root downward to penetrate into that cold water. It will not go there. It skims along on the surface. You will find it only two or three inches below the surface; not much more than covered up. Consequently, when the drought comes, these roots, being right on the surface, feel its effects the soonest, and therefore, plants growing in lands that are ordinarily wet, are the very first plants to suffer. By taking that cold water away, you warm up the land. How do you do it? There are several ways, one of which is this. If the cold water is drawn off from below the surface, when the rain falls, it brings down with it a good deal of heat, and instead of running off in streams on the surface, it passes directly down, carrying the heat along with it.

As it passes down, the earth, being a great robber, robs the water of all the heat it contains, and keeps it to itself; so that if you should put a thermometer in where it falls, and find just where it stood, and then go to the outlet, forty or fifty rods distant, you would find it stands ten degrees colder than when it fell. That warms the land, and drainage enables this rain to penetrate the soil, and therefore it makes cold land warmer.

I said also that it makes wet land dry. You see that must take place by what has been said already. Water seeks the lowest level all the time, and when a drain is made two, three or four feet below the surface, there is a level which must be found, and the water percolates that ground until it finds that level, and consequently the land becomes dry.

I said, in contradistinction from that, that dry land is made wet. How is that done? When you have drained the water off, your land is dry, and in case of drought, if you make the surface fine, you make it dry; but if, by means of your machinery or your hoe, you keep the surface fine, you have it continually watered by the atmosphere. We could not live five minutes if the atmosphere was not moist, but it is full of moisture all the time. A great wet blanket, as it were, is imparting its moisture to that fine surface, which receives it into its many million mouths, and passes it along to other mouths; down it goes, down it goes, continually robbing the atmosphere of its moisture, until it gets down where the earth is a little cooler than the atmosphere, and then it condenses into water. Just exactly as water condenses on the outside of your pitcher on a hot day, when you go to the well and fill it with cold water, and set it on the table. In a few moments, the outside is covered with drops of water, and you say "it sweats." But there has not a particle of water passed through the pitcher. It is only the colder surface of the pitcher that condenses the vapor in the atmosphere into drops, and it trickles down the pitcher, and wets the table-cloth. I think it is just as clear as anything can be, that draining makes wet land dry, and dry land wet.

I believe you can cultivate a piece of land that is thoroughly drained—if it is anything like hard land—at about one-half the cost that you can wet, heavy land. The operations of tilling

the soil are infinitely more easy than they would be if the land were compact, were hard.

Now, all lands, I think, have inherently, the power of self-recuperation. I do not believe there is a rod of land in this town that cannot be brought into fertility without adding one particle of manure. Heaven has been more favorable to us than to leave land in such a condition that it will always be barren ; it only requires a fair chance. If it is skimmed over with a crust, it may remain for a hundred years, and not become fertile ; but if you remove that crust, and get it into a fine tilled surface, it will improve from year to year, vegetation will spring up on it, and grow luxuriantly. Now, one of the effects of drainage is to give land a chance to do something for itself. That will help it much, without the aid of ploughing, manuring, or seeding, or anything of the kind. I could show you, within half a mile of where we stand, a meadow that was covered with hassocks from three to ten inches high—the whole meadow nearly covered with those hard, unsightly, inconvenient hassocks. A ditch was dug through the entire length of that meadow, and a stone drain built. It lasted about seven years, and it operated precisely as Judge French has said. A mole would work its way down or up into the drain, and then would come a heavy shower, and wash the fine mud down there, and one winter, after the drain had been laid seven years, I noticed a circle about six feet in diameter where the grass was just as green in January as it was in June. I went up to see what was the cause of it, and found a warm stream bubbling up and spreading all over this surface. The ditch had become filled up, and the water had broken through the ground, and was sufficiently warm to melt the snow and keep the grass green through one of the severest winters we have had for fifteen years. Then a tile drain was put down by the side of this stone drain, and there has been no trouble since. One side of this meadow was drained by lateral drains, and these were about twenty feet apart, and four feet under ground. You see how rapid the process must be, where you put drains down in that way. The consequence was, that in the course of two or three years, without carrying a plough upon the piece at all, or one particle of manure or seed, every hassock disappeared, the ground became smooth and beautiful, and timothy came up there four

feet high, and some of the heads measured nine inches in length. That was the effect, I say, of draining the land. On the other side of the ditch, where no lateral drains were made, the hassocks remain to this day.

This is certainly one of the most interesting subjects relating to farming operations, and I think that our people ought to give it more attention. I feel obliged to the Board of Agriculture for introducing it here, and hope it will be fully discussed.

Mr. WARD. This is a subject on which I am entirely ignorant, and I would like to ask Mr. Brown if, in connecting his pipes, he makes them close, so that there shall no water work in in at the joints?

Mr. BROWN. No, sir, you cannot get them so close together. As has already been said, they are a little crooked, because they are dried standing up edgewise. But if you should make the joints perfectly tight, the water would get through. Suppose you suspend a brick by a string and pour water upon it; in half an hour you will find the water upon the other side, because the brick is porous. The tile itself is porous, and the water would pass through, even if the joints were perfectly tight. But you cannot make the joint so tight as to prevent the water from getting in. When I lay my drains I pick up all the old pieces of tin and sheet-iron I can find—sheet-iron stoves and tin kitchens—and cut them up into strips, and when I have laid a couple of tiles, I put a strip of this tin or sheet-iron over the joint, of course covering carefully with straw, or brush, or anything I can get, before I throw the earth on; and never yet, though I have some drains that have been in ten or fifteen years, have I found a tile-drain filled up.

The CHAIRMAN. I will ask Mr. French if he has had any experience in the manufacture of these tiles?

Mr. FRENCH. The first tiles I used, in Exeter, N. H., I bought in Albany, paying \$12 a thousand for them there, and transported them at an expense of \$12 a thousand more. Not liking to buy them at that price, but finding, by that experiment, that tiles were what I wanted, I went to a potter in the town, and asked him if he would burn me some tiles. He said he would, and I sent and got a machine to mould them, and went into the manufacture myself. After a little while some of my neighbors—the man who owned the clay and somebody else

—said they would like to buy the machine and take the business out of my hands. That was all I wanted. They did so, and another person set up opposition, and erected a regular set of tile works, which are there now. That was perhaps fifteen years ago. I will tell you this, as the general conclusion to which I have come in regard to it, that you can make two-inch tiles, which are the best size for ordinary use—for large drains you will want a larger size, but nine-tenths will be of that size—at just about the same price as ordinary brick. That, of course, varies from four or five dollars a thousand to fifteen, with the different localities, but I think that is a fair estimate. They require less clay, being lighter than brick, but the manufacture is a little more expensive, because they are not so compact and not so easily handled. The transportation will be a little more, because they are more bulky. There is no sort of difficulty in making them. Anybody who knows anything about handling clay could take up the manufacture and go along with it. In England tiles are frequently put into a brick kiln and baked with brick. Any gentleman who is near brick works can help himself in that way, by getting a machine and getting the brick-makers to burn the tiles for him.

Adjourned, *sine die*.

ANNUAL MEETING IN BOSTON.

The Board met at the office of the Secretary, in Boston, on Thursday, the 30th of January, at 12 o'clock, M.

Present, Messrs. Baker, Billings, Birnie, Cleaveland, Clement, Cole, Davis, Durfee, Fearing, Hubbard, Hyde, Johnson, King, Knowlton, Loring, Moore, Porter, Saltonstall, Sanderson, Sewall, Slade, Smith, Thatcher, Thompson, Thomas W. Ward, H. S. Ward, Watkins and Wilder.

Colonel WILDER was requested to preside, and accordingly occupied the chair.

After the reading of the records, a committee was appointed to consider and report the order of business for the session, consisting of Messrs. Saltonstall, Davis, and Ward of Shrewsbury. This committee subsequently submitted the following:—

1st. Report of Examining Committee of the Agricultural College, and all other business coming before the Board as Overseers of said College.

2d. Reports of Delegates.

3d. Reports of Committees.

4th. Essays on Special Subjects.

This report was accepted, and Mr. Hyde, chairman of the examining committee of the Agricultural College, presented the following Report of the committee appointed to attend the examination of the

MASSACHUSETTS AGRICULTURAL COLLEGE.

The Committee appointed by the Massachusetts Board of Agriculture to attend the examination of the Agricultural College at Amherst, having attended to that duty, respectfully submit the following Report:—

The first session of the college commenced October 2, with a class of thirty students, and closed December 17, at which time the class had increased to forty-six. It was our pleasure to be present on the last day of the session and to hear the class review the studies to which they had given their attention during the term. The examination was conducted by Prof. Snell in geometry, by Prof. Goodell in physiology and gymnastics, by President Clark in chemical physics, and Prof. Stockbridge in practical agriculture; and in all these branches the students showed proficiency, especially considering that only one short session of eleven weeks had been devoted to study, and that many of the students labored under the disadvantage of commencing late in the term, and both professors and students had entered upon a new enterprise, in which were few precedents to furnish light for their guidance. The first glance at the class showed a company of bright, intelligent faces, such as would do honor to any literary institution in the land, and such as we might expect among the sons of the most enterprising yeomen of Massachusetts. Their age varied, we judged, from sixteen to twenty-five, and though this disparity might seem to be a hindrance to their pulling evenly together, still, during the exercises of the day, both physical and mental, we did not notice but that the younger kept up well with the older. A glance at the class also convinced us that order, the first law of schools, as well as of heaven, had been enforced upon the students, not by despotic power, but by the magic which a candid, calm, but firm and decided will of the superior always exerts upon the

inferior. A more extended observation only served to strengthen our first impressions. There was a manifest sympathy between teachers and scholars, which led them to feel that they were a unit—partners in a grand enterprise—the success of which depended upon each man's doing his duty. This power of enlisting the sympathy and controlling the public opinion of a school is the great secret of success in its management. We had but to shake hands with President Clark to feel that he was enthusiastic, and all the manifestations of the examination proved that his enthusiasm had diffused itself among his associates and pupils.

The recitation in mathematics was good, considering the short time that had been devoted to this study, and also the fact that few of the students, probably, had been previously trained to habits of investigation in this exact science. Pure mathematics are dry fodder for most minds, even when well disciplined, but to take boys from a farm and put them to the study of geometry, is like taking cattle from foraging in a green pasture, and confining them to be fed on dry hay. The examination in chemistry showed that this science had been pursued with a better relish, and had been better digested. Probably many of the students, while pouring over the demonstrations of Euclid, had asked, "What is the use of this?" but while pursuing the less abstract science of chemistry, its practical bearings on their future business were so manifest, that they were encouraged in their course by seeing the goal so plainly in sight. Many older heads, on looking over the list of studies in the college, have asked us, "Why is the course of study so comprehensive, and the time for study extended to four years?" The impression on some minds seems to be that lads can go to an Agricultural College, and graduate, much as our clerks do from our commercial colleges, after taking twelve lessons in writing and six in book-keeping. We might put boys through our Agricultural College in the same style, giving them a few lectures on chemistry, and a lesson or two in digging potatoes, and they would graduate dunces, having acquired little knowledge, less mental discipline, but much conceit by their college course. But if we wish to elevate the business of farming, if our aim is to develop true manhood, and lay the foundation for intellectual strength in the students of the college, then

we must have a comprehensive course of study, and ample time to pursue the allotted studies. Possibly the designated time of four years, may prove, on trial, to be too extended, but we are happy to learn that most, if not all who have entered the first term, have enlisted for the full course. It is well to have the standard high, and it will be an easy matter to reduce the time to three years, if on trial, it is found expedient. We were particularly gratified with the exercises in gymnastics, under the direction of Prof. Goodell. These exercises tend not only to develop muscle and promote health, but also induce a gentlemanly bearing and a graceful motion, qualities in which farmers are sometimes accused of being deficient. The elasticity, precision and grace of manner which are usually taught in our fashionable seminaries by an expensive course of dancing lessons, may as well be inculcated in a thorough gymnastic course. Dancing, indeed, is only one form of gymnastics, and if necessary, can be incorporated into the course; but so far as we could judge from the lithe and manly motions of the young men under Prof. Goodell's training, it will not be necessary to put them through the mazes of the polka and schottish. We hope to see the graduates of the Massachusetts Agricultural College as distinguished for their gentlemanly habits and polished manners, as are the graduates of West Point. Rusticity should not be derived from and associated with life on the farm. There is no reason why a farmer should not be a gentleman, in the highest sense of that word,—gentle, both in thought and manner; and one of the advantages which we hope will accrue to the farming interest from the establishment of the Agricultural College, will be an improvement of manner in our rural population, so that rustic shall no longer be synonymous with clownish, as Webster now has it.

The examination of the class by Prof. Stockbridge, upon his teachings of practical agriculture, both in the field and the recitation room, proved that the strong common sense and keen observation of the Professor, had made an impression upon his pupils. The class had labored under the disadvantage of having no text-book, adapted to their wants in this fundamental part of their education, a deficiency which we trust some of the learned professors of the college will remedy ere long.

Interspersed through the forementioned recitations, were exercises in composition and declamation. This department is also under the care of Prof. Goodell, and the pupils showed good training in the forum as well as in the gymnasium. The ability to communicate thought by written and vocal language, is one of the highest God has given us. The power which the orator has over his fellow-men, convincing their understandings, and swaying their feelings, is the highest which man possesses. We were glad to notice that this power is cultivated in our Agricultural College. Farmers as a class have not given that attention to rhetoric which its importance demands, and consequently have not exerted that influence to which they were otherwise entitled by their numbers, wealth and sound judgment.

The little leisure that was given us after the close of the examination, was spent in looking over the college buildings and grounds. We will not detain the Board with repetition of information on these points which can be better obtained from the report of the Board of Trustees. The farm is large and will require all the knowledge, ability and energy of Superintendent Stockbridge to bring it into a model condition. The buildings are good, so far as they go, but their capacity is exhausted by the present class, and a new dormitory and a larger boarding-house will be needed for the accommodation of the freshmen of next year. An appeal will probably be made by the Trustees to the legislature for aid in the erection of these buildings, and we trust will not be made in vain. The present dormitory only furnishes accommodation for forty-eight students, giving a sitting-room and two small bedrooms for each couple. We looked into some of these rooms, and found them comfortable and orderly.

Our attention was particularly called to a conservatory, built by the liberality of one of the members of our Board, and mostly filled by the liberality of two others. This conservatory is adapted both for the rearing and propagation of plants, and is built on the plan of two octagons, forty and sixty feet respectively in diameter, and connected by a glass house twenty-five feet in width. Grouped around these octagons are compartments for different kinds of plants requiring different amounts of light and heat. In the centre of one was being built a tank

for the reception of the Victoria Regia, with different aquatic plants ranged around its sides. In the centre of another, a large variegated century plant, cultivated for thirty years by Dr. Hitchcock, was already thriving in its new home. In the centre of another a fine specimen of the banana was to be seen. We are not connoisseurs in these matters, but the arrangements of the building and the thrift of the plants were evidently a source of great delight to the eye of President Clark, and in his skill and taste we place implicit confidence.

In conclusion, we congratulate the Board and the State generally that Massachusetts has at length, after long throes and struggles, produced a live Agricultural College; and if "the child is the father of the man," the promise for the future is all we could desire. We know that other similar institutions in our country have generally proved failures, and that governors and other wise men still predict the failure of this experiment; but having been on the ground and seen the vigor with which this young institution comes into existence, we have high hopes that it will reach maturity and have a long and useful career. It may need careful nursing, but we have faith in its present guardians, and faith in the State by which it must be supported. Massachusetts has ever taken the lead in charitable and educational institutions, furnishing models for the other States, and we hope now to see a model Agricultural College. We have in comparison with many other portions of our country, a sterile soil and a rigorous climate; but if we cannot compete with some of our sister States in raising Shorthorns, we can raise what is infinitely preferable—we can raise men; and Amherst affords excellent facilities for their education.

ALEXANDER HYDE.

WM. BIRNIE.

This Report was adopted, when it was unanimously

Voted, That the Massachusetts Board of Agriculture, as Overseers of the Massachusetts Agricultural College, are desirous of uniting with the Trustees of the College, in petitioning the general court to make an appropriation for the erection of such additional buildings as are absolutely necessary for the uses and the prosperity of the college.

Voted, That the Secretary be instructed to communicate a copy of the above vote to the Trustees, to be communicated by them, if they see fit, to the legislature.

Voted, That the subject of the connection of the Board with the Agricultural College be referred to a committee of five, to be appointed by the Chair, to consider and report upon it to the Board.

Messrs. King, Saltonstall, Davis, Hyde, and T. W. Ward.

Messrs. Porter, Sanderson, Clement, Billings, Stockbridge and Durfee presented their reports as delegates respectively to the Worcester South-East, Hampshire, Hampden, Hampshire, Franklin and Hampden, Franklin, and the Martha's Vineyard Societies.

SECOND DAY.

The Board met according to adjournment, Colonel WILDER in the chair.

Reports of delegates were submitted as follows: By Dr. Loring upon the Middlesex South; Mr. H. S. Ward upon the Essex; Mr. Hyde upon the Worcester North; Mr. Johnson upon the Hampden East; Mr. Knowlton upon the Norfolk; Mr. Cole upon the Bristol; Mr. Watkins upon the Bristol Central; Mr. Hubbard upon the Plymouth; Mr. Thatcher upon the Barnstable; Mr. T. W. Ward upon the Nantucket.

Mr. Slade submitted the following Report on

HEDGES AND FARM FENCES.

The planting of hedges and the building and maintaining of farm fences is truly a very important item of farm husbandry. The amount annually expended for these purposes forms no small item in farm accounts.

As this class of improvements does not directly contribute to the yearly income of the farm, in many sections of the State they have been sadly neglected.

To see a farm neatly and handsomely fenced, while travelling in almost any direction, is an exception to the general rule; while a reeling rail fence or a dilapidated stone wall is a prominent feature in almost every landscape. Yet there is no investment which gives a more real or permanent value to the farm than that which is made for the purpose of neatly and substantially inclosing its fields.

A farm that is well fenced, though its soil be but moderately productive, is almost certain to attract the attention of a purchaser as well as traveller. Aside from this, such improvements greet and gladden the eye of the occupant from day to day, and afford him the agreeable satisfaction of feeling that his cultivated crops are secure against the ravages of his roving herds. Fences built of stone are undoubtedly the most durable, substantial and economical; and for this purpose nature appears to have furnished a large majority of the New England farmers with ample material for fencing their farms into fields of convenient size. When a stone wall is to be built, a trench should be dug below the frost line and wide enough to take the bottom of the wall. This should be filled with small stones, and the foundations of the wall laid near the surface. This not only secures the wall against the action of the frost, but at the same time accomplishes a certain amount of drainage, which of itself will fully compensate for the extra outlay and expense. If such a wall be not over four feet in height, and be built in a workmanlike manner, it will not be likely to need any repairs from the present generation, to say the least. We frequently err in building farm walls too high. High walls are much more expensive to build, more liable to fall after they are built, and by the roadside are in exceeding bad taste. To a certain extent they break off the view from the adjoining fields, giving to the highway a sort of dreary and monotonous aspect, at the same time making it a complete receptacle for all the snow which a driving storm can deposit between its walls.

Where, from a scarcity of stones, it is necessary to construct fences of wood, it becomes a matter of considerable importance as to how posts and stakes may be rendered most durable. A chestnut post six inches in diameter will not ordinarily last more than ten years in a dry soil, and if the soil be moderately wet it will decay and fall down in a much shorter time. White cedar will stand perhaps fifteen years. The red cedar, or juniper, and the locust are undoubtedly the best kinds of wood to resist the action of the weather, and therefore for fencing purposes are almost invaluable. The juniper is usually found on rocky hillsides and stony pastures, and therefore is seldom used for fencing purposes in the neighborhood where it grows.

The scarcity of the locust in this latitude, and the constantly increasing demand for building and other purposes, far exceeds the supply, and the consequent high price prevents its use to any great extent for common fence posts. Various expedients have been resorted to, to prevent the decay of wood, when exposed to the weather or buried in the ground. As yet, we believe, nothing has been discovered which renders it completely impervious to the action of the elements. The process of kyanizing is practised to a considerable extent for the preservation of railway sleepers, and we believe is found to well repay the expense. Experiments also prove that the ends of posts and stakes dipped in hot coal tar and then covered with coarse sand, are rendered quite indestructible for a long time. This very cheap and simple operation we have practically tested, with the very best results. And we would here state that a post or stake, inserted in the ground with the top or little end down, will last nearly twice as long as when the big or but end is put in the ground. Wood dipped in crude petroleum, or allowed to remain in it a few hours, is said to become exceedingly durable. Where there is a lack of fencing material, hedges may be planted, and, if properly cared for, can in a few years, be made to answer all the purposes of a fence. There are but a few shrubs, however, which are well calculated to make a close and impenetrable fence. For farm purposes, the Osage orange and the buckthorn are without doubt the best, although the former is not well adapted to the climate of New England. The buckthorn may be grown from the seed or plants, and with proper care, little or no difficulty will be found in making them live. A hedge, to be of practical use, must be thick at the bottom and therefore should be closely cut back, while young; and often pruned, in order to force out lateral shoots near the ground. When it has attained the desired shape and size, it will require an annual pruning, the best time for which is in July or August. When a hedge is grown for protection or for ornamental purposes, which is more frequently the case in New England, we prefer some of the evergreens, such as the American *arba vitæ*, Norway spruce, or hemlock. They are rapid growers, perfectly hardy, easily pruned, and form a delightful contrast with those deciduous shrubs or trees, which are robbed of their foliage seven months of the year.

The privet, though not an evergreen, makes a very beautiful hedge. It does not grow large, and if tastefully trimmed is truly ornamental. Its blossoms and its berries give it a charming appearance, and it holds its leaves till the near approach of winter.

EVERY P. SLADE.

The Essay led to some discussion, after which it was accepted.

THIRD DAY.

The Board met at 10 o'clock, Mr. KING, of Barnstable, in the chair.

Mr. Thompson presented a Report as delegate to the Middlesex Society.

Mr. Smith presented the following Report, upon

MANURE AND ITS APPLICATION.

Manure, Webster says, "is anything which fertilizes land or furnishes food for plants." With this definition the subject under consideration takes a broad meaning, and may be applied not only to the productions of the barnyard, but to what are called special manures, (some of them,) and also to those materials, either vegetable or mineral, which are used either directly or indirectly for manurial purposes, such as muck, marl, clay, plaster of Paris or gypsum, salt, lime, gas lime, ashes, and vegetable matter in the form of green crops ploughed in. Thorough cultivation, drainage and irrigation will be allowed to be classed under this head also.

It will be a waste of words and of time at the present day to say one word in regard to the importance of making and saving manure. "Without good manure successful farming is impossible."

The farmers of New England do not build their barns over a stream of water, or practise moving their buildings to rid themselves of the manure accumulations. But there are practices in some (too many,) localities in which the loss is very great, if not as great, as in those above mentioned; one of which is that of driving the stock to the brook or spring to water, whereby the animals are exposed to the storms, and very much manure is lost.

This "waste of manures," of fertilizing matter, which if applied to the soil would make our impoverished farms as rich in production as a garden, is enormous. The amount of wheat-producing material which is yearly lost to agriculture and to the world, demands our attention, and the day is approaching when this waste upon our farms, and more especially in the cities, the waste of sewerage, shall be converted into fertilizing matter, to be used for agricultural purposes.

One writer upon this subject estimated "that every family of five persons annually created refuse matter sufficient to manure one acre of land; and that the fertilizing matter annually wasted in Boston was sufficient to restore 30,000 acres of poor land to fertility." It is estimated that the money value of this waste of fertilizing matter in the city of New York, exclusive of the products of the immense number of animals, amounts to \$5,475,000 annually.

Experiments have been made to a small extent with the use of this sewage upon different plants with great success.

The question is frequently asked by the progressive agriculturist, "How can we make more manure?"

Those living near cities, or stables, resort to them for elements to supply to the soil that which their crops exhaust. Those living more in the interior, resort to muck beds, clay pits, scrapings from the roadsides, and to commercial fertilizers to help eke out their scanty supply.

In the tobacco growing regions, large quantities of hay, grain and oil cake are bought and fed to animals for the secondary purpose of obtaining the manure. And if it is true that the value of the manure does not depend upon the animal, but upon the food, then we are led to conclude that those who feed such quantities of fat-producing material as cotton-seed, rape and linseed cake, must have manure of great value. For according to Prof. Lawes, than whom there is no better authority, one ton of cotton-seed cake is worth \$27.86, and one ton linseed cake \$19.72, for manure.

Allowing these figures to be correct, and if these articles can be so fed that fair returns can be made in beef or mutton, we see the desirableness of depending more upon the manures of the farmyard, and less upon the worthless trash sold for fertilizers.

Of the importance and value of farmyard manure, Dr. Cameron, of the Dublin Chemical Society, says, "Farmyard manure is the best manure which can be applied alone, inasmuch as it contains all the elements required to nourish every kind of cultivated plant." But it is of little consequence what the value of the solid or liquid excrements are, unless they are husbanded. If manure heaps are exposed to the wash of rains, or if the drippings from the eaves to our buildings are allowed to run into the barnyard, until the yard is filled with water, and finally run off into the highway, or if no absorbents are used to save the liquids, but they are suffered to leach away, and so are lost. Bedding of some sort or other, whether it be of sawdust, sand, muck, or straw, when put under the stock, serves a twofold purpose, that of keeping the animals from filth, and to absorb the liquid manure. Too much cannot be said upon the importance of saving the urine of all our stock, for we are told by those who ought to know, that it is of equal value with the solids.

Those who have recently adopted barn cellars, or barnyards entirely covered, tell us that they can see a difference in the strength of the manure, which I account for by the fact that it is all saved, both liquid and solid; none is lost by the wash of rains.

MUCK.

Of the materials which are used as fertilizers, which are composed of vegetable matter, muck, or peat, may be considered as standing at the head, not only because of its value of itself, but because of its abundance.

Although muck may not be found on every farm, yet there are but few towns in which there are not large quantities. There is in the town in which is the residence of the writer, a number of muck swamps, some large and some small. One of these is situated some five hundred feet above the Connecticut River, and contains about twenty acres, and will probably average ten feet in depth, and consists wholly of vegetable matter, easily cut and free from stone or stumps. Now if it is true, as claimed by Prof. Dana, that two cords of muck, when mixed with one cord of stable dung, will make three cords, each of which will be of as great value for manurial

purposes as the one cord of stable dung, then what a mine of wealth is contained in this one muck bed.

Muck may no doubt be applied improperly, and it must be better adapted to some soils than others. In order to be in good condition for use, it ought to have been dug a year, that it may be exposed to the frosts of winter and the heats of summer.

An individual of my acquaintance once carried from this swamp, before spoken of, to a field consisting of a soil quite light and sandy, a large quantity of raw muck at considerable cost, without producing very great results. Muck can be more advantageously used than to be used alone. When dry, its power of absorption is very great, and for this reason when used in the stables, or hog pen, or under the sink spout, or in the privy; large quantities of valuable manure can be made at a comparatively small cost.

It is especially adapted for use in composting with manure, and when mixed with ashes makes a compost coming nearer to stable dung than anything else we have. I witnessed last season an experiment with muck and ashes in the drill for English turnips. A large portion of the field was manured with a compost of barnyard manure. A small part of it had muck and ashes mixed, applied in the same manner as the manure; four bushels of ashes were mixed with twenty-five of muck. The crop exceeded the other in luxuriousness and yield.

Too much can hardly be said of the importance of a free use of muck upon all soils which are sandy or gravelly, to be placed in the barnyards, and mixed with manure.

Farmers in some parts of the State have, during the past few years, expended large sums of money for what are called foreign manures—the phosphates, Peruvian guano, Mexican guano, African guano, sea-fowl guano, muriate of lime, flour of bone, ground bone, and a host of nostrums which have been conjured up to deceive the farming community and put money into the pockets of the vendor. If one-half of the money which had been expended for these articles which are sold for fertilizers had been laid out in draining or in better cultivation, or in labor in composting with muck, or in saving some of the “waste of manures,” the farmers would to-day be better off. We do

not utterly condemn the whole list of special manures, but we do say that animal or home made manures must be relied upon as the main stay of the farm. Others may be used as stimulants or helps. For instance, some plants which are slow to start, or feeble in their early life, may be benefited by a small dose of phosphate or guano; or it may be seen, after the plant is up, that it is not coming forward fast enough to mature in our short season; then an application of some quick-acting fertilizer may be used with profit, and the plant may have new vigor given it.

I have become satisfied that the most advantageous way of using special manures, unless it is in some particular cases, as previously stated, is in connection with barnyard manure.

If the object is to increase the value of your manure pile by the addition of some special manure, then thoroughly mix it with your barnyard manure, adding thereto some muck or loam, as the case may be.

An experiment came under my notice a short time since, which I will relate. A field consisting of ten acres was to be planted with corn. The autumn previous muck was carted on the field in several piles, at the rate of fifteen loads of thirty bushels each to the acre, and fish guano mixed with this muck at the rate of ten hundred pounds to the acre. The following spring barnyard manure at the rate of six loads to the acre was thoroughly composted with this muck and fish, it being worked over three different times. The land was ploughed, the compost spread, and worked in with the harrow. The result was seventy bushels of corn to the acre.

I have also known fish guano to be composted with barnyard manure of a dirty character, and spread on mowing fields in the autumn, to be followed with good results.

PLASTER OF PARIS A MANURE.

Plaster of Paris, or gypsum, when used on sandy loam, containing organic matter, generally gives satisfaction. It seems to be especially adapted to clover fields, applied to the clover and not to the soil, and also to be used on the manure pile and with manure. When, how and where to use these articles should be the constant study of the farmer.

I recollect hearing an observing man state at a meeting of a farmers' club, of his applying a small quantity of plaster of Paris to the hills of a piece of Indian corn, after the plants were up; but before he had finished, he was driven from the field by a shower of rain. After the shower he returned and finished the piece, but those rows which received the dressing before the shower were very much benefited by the application, while the others were not.

IS SALT MANURE?

If the testimony of distinguished agriculturists, both English and American, is of any weight, then common salt, used as a manure, is not sufficiently appreciated.

Sir. John Sinclair, whose practical knowledge and sound judgment are well known, wrote, at the commencement of the present century, as follows: "It is proved by a variety of experiments that sea salt, properly applied, acts as a manure." "It is particularly useful when mixed with a dung-hill or strewed over farmyard manures at the time when they are carried out into the field." It increases the crop of mangolds two or three tons per acre. Mr. John Johnston, the celebrated Scotch farmer of Western New York, says, in regard to an experiment with salt: "The line of demarcation between the salted and the unsalted portion is very distinct throughout the whole length of the field. It is some four or five days earlier."

Other instances might be given to prove the benefit of using salt, either on mowing or pasture lots; and it is the testimony of others that it is especially adapted to wheat crops, giving a brighter and stiffer straw and heavier grain. The quantity recommended to be used to the acre, both in England and this country, varies from three to twenty bushels.

GREEN CROPS PLOUGHED UNDER FOR MANURE.

This manner of increasing the fertility of the soil is not new. We read of its being practised by the ancient Romans and Grecians. It is practised now to a greater or less extent by almost every country.

John F. Wolfinger has written quite an elaborate report upon "Green Manuring and Manures," which was published by the Agricultural Department at Washington in 1864, in which the

plants best adapted for the purpose are treated upon, and the testimony of distinguished gentlemen is given in favor of this mode of fertilization, as also some of the objections to green manuring are stated, such as the expense of seed for the growth, and the disadvantage arising from the acidity which green plants give to the land.

With this, as with everything else, circumstances must govern the practices we adopt. If lands be situated at a long distance from our barns, so as to make the expense of cartage to and from considerable, it may be well to adopt some plan of this kind ; but with hay at from twenty to thirty dollars per ton, it seems to me that there would be more profit if the crop grown were clover, to make it into hay, feed it to stock, and apply the manure to the soil.

Clover is a valuable crop to raise for feed and manure. Prof. Lawes tells us that one ton is worth \$9.64 for manure ; but one of the greatest advantages in ploughing in a crop of clover, in my opinion, lies in the value of the roots of the plant.

IS LIME MANURE ?

This question can be easily answered in the affirmative, if it can be proved that it tends to increase the fertility of the soil or furnish food for plants. There is a wide difference of opinion among farmers as to the benefits to be derived from the use of lime as a fertilizer. For while one man who makes an application of lime to his land finds his crop nearly doubled, another, with a similar application, finds the produce of his field not at all increased. Although a large number of instances might be cited where individuals had found an application of lime beneficial, I will mention only one, which is the one alluded to by Mr. Huntington, in his "Agricultural Survey" of Hampshire County, which may be found in Flint's Report of 1865-6, p. 301. The case is that of Mr. Green, of Hadley, who used lime with marked success, bringing his mowing fields from beds of moss to fertility, and to yielding good crops of hay.

Lime of itself will not give fertility to the soil, but acts as an indirect rather than as a direct nutrient matter to crops. Neither does it bring plant-food into the soil, but prepares that which is there for plant-food.

Lime has been condemned by many because of its having been put upon poor soils, so that it had nothing to operate upon. William Bacon says: "Lime is extremely valuable for lands which have acquired too much acidity." It is often used in composting with muck, and may tend to correct the acidity which is frequently found in that article. Lime should never be used with manure, unless the manure is immediately ploughed under.

IS GAS LIME MANURE?

The testimony of the members of this Board as given at the meeting at Concord, December, 1867, was in favor of the negative. But I am inclined to think that it may have been used improperly. From what I can learn from the statements of individuals, it should be used in small quantities. Mr. Whitman, of Little Falls, N. Y., in speaking of gas lime at a meeting of the farmers' club at that place, says: "Gas lime can be turned to good account if properly applied. We this year spread 1,000 bushels upon our meadows with good results, we think, paying largely in the increase of crop. At first we did not know how to apply it, and by putting it on too largely the plants were destroyed. Judgment is need in the application of all fertilizers, and especially with a material like gas lime."

Mr. Horace Russell, a farmer of North Hadley, has used gas lime quite extensively upon his mowing and grain fields, with satisfaction. He has stopped using it because of the expense of getting it, having to freight it some twenty miles by railroad, then carting it five miles in addition, to his home.

ASHES ARE MANURE.

They work admirably on some soils. It is a common remark in the Connecticut River Valley, that "a bushel of ashes will make a bushel of corn." A very good farmer of my acquaintance, who likes the idea of raising his corn cheaply, is accustomed to raise his corn on turf land, applying a few bushels of ashes in the hill, and succeeds in getting good crops of corn, which he follows the next year with tobacco, manuring bountifully, afterwards following with wheat, then with grass. Very good crops of corn are grown on turf land in a fair state of cultivation, with an application of ten or twelve bushels of

ashes to the acre, in the hill. Ashes seem to be well adapted to mowing fields; the result of the application is to bring in clover. Onions are raised with success where ashes are applied together with manure. I would not be understood as recommending the mixture of ashes with manure in this case or any other, unless the mixture be immediately ploughed under; the result being similar to the mixture of lime and manure, it tends to dispel the ammonia in the manure.

Plaster of Paris when mixed with ashes and put in the hill for corn, produces excellent results.

Thorough cultivation and pulverization, are important methods of increasing fertility. Jethro Tull's theory was, that minute division, and pulverizing, without the application of manure, would maintain the fertility of the soil. And experiments have proved the value of pulverization. In ploughing, merely turning over the soil should not be the only aim, but to break it up and fine it. Continued stirring opens the earth to the influence of the sun and air, the earth is warmed, and chemical changes are produced, and each time the soil is stirred adds to its fertility.

But how can wet soils be pulverized? Ploughing tends rather to press together, and render them more compact, and less penetrable by air and water.

This leads us to ask the question?

IS DRAINAGE MANURE?

What are the effects of drainage? Thorough drainage deepens the soil. Of what use is it to plough deep and manure heavily, while the soil is full of water. The roots of plants will not go down into stagnant water. The elements of plant food, are not all on the surface, many of them have been washed down by the rains, some of them are found in the decomposing rocks themselves. Take away the water and the roots will find them.

Drainage lengthens the seasons. In our climate this is an important point to be gained. If by drainage, one or two weeks could be gained, it would be quite a relief in our backward springs, when there is so much to be done in a short space of time.

Drainage increases the effect of the application of manure, the soil being drier, is more easily worked fine; the manure is also more evenly distributed. The water also passing through the soil, carries fertilizing matter down to the roots of plants. When there is stagnant water, manure must decompose slowly if at all; but let the water pass off, the air is admitted, and decomposition takes place.

What observing man is there who does not know that his crops are improved in quality, by drainage? Sweet English grass and clover take the place of sedge and rushes.

IS IRRIGATION MANURE?

The author whom we have already quoted says, "Irrigation (in agriculture,) is the operation of causing water to flow over lands for nourishing plants." That pure water, when properly caused to flow over most of our soils in some seasons of the year, will cause a greater growth of vegetation, none will deny. But it has been clearly shown by some of our most distinguished agriculturists that the application of fertilizing matter in the form of liquid manure to the soil, was the best that could be used for the growth of plants. And there is no agricultural question more important than that of the improvement of the soil by irrigation, if by this means the rich organic and other matters which are now carried into the sea could be saved to agriculture.

The application of manure to the soil, so as to be of the most benefit to the crop and land, is a subject which circumstances have much to do with. Our soils, climate and seasons vary so much that no rule can be laid down which shall be applicable to all localities and crops. How much of the manure is lost by exposure to the elements, and how much by what is called leaching, are questions which are commanding the attention of practical and scientific men at the present time. And in what condition the manure shall be applied—whether in its fresh, green state, or when partially decomposed, after fermentation has taken place? The proposition which was laid down by a former member of this Board, that "farmyard manure never possesses more of the elements of plant-food than in its original unfermented state," is no doubt true; for whatever advantage fermented and rotted manure may have over unfermented, it is

not claimed that by the process of fermentation it receives any addition, but that these are changes in the forms and combinations, that render the elements more available; fresh manure contains the elements of plant-food, but not the food itself.

S. W. Johnson, says that fresh manure is not a fertilizer, and cannot be appropriated to any extent. And Dr. Voelcker, shows that the amount of ready formed ammonia in fresh manure is very trifling, and that the proportion of soluble matters, both organic and mineral, is very small.

A writer in one of the late agricultural periodicals in speaking upon this very subject, says: "This accounts for the comparatively slow action of such manure," "and shows the need of such management as will best prepare the elements for the use of plants. This preparation is due chiefly to fermentation and decomposition."

Admitting it to be a fact that this fermentation must take place before manure becomes plant-food, and admitting it to be a fact that this fermentation will take place in the soil when applied in its green state, does it follow that the soil is the most suitable laboratory for its decomposition? Or, that when so applied the greatest benefit is derived therefrom? The slow and comparatively slight action of fresh barnyard manure in many cases, would seem to indicate that there was but little fermentation in the soil.

And may not this be one reason why we so often hear after a heavy coat of green manure has been ploughed in rather deep, that it produced little or no effect?

This is particularly the case in soils which are wet and cold. For it is admitted by all that manure in the soil can decompose only when the soil is favorable, neither too wet nor too dry. Now, if manure is buried too deeply in a cold soil, it must remain a long time inert, or, decomposition takes place so slowly that the succeeding crop receives no benefit from it, nor does it seem as if there was ever any perceptible advantage derived from the manure. I heard a gentleman of very much common sense, and candor, state not long since, that he ploughed in a heavy coat of manure ten inches deep, and that he believed that it was entirely lost to him. Now manure buried so deep as that, would not be very apt to lose its ammonia by evaporation, and as we do not believe in manures leach-

ing, unless in very loose soils, the question will arise, what did become of it?

It may be said of dry soils, that the manure may be lost in a great measure, because of the lack of sufficient moisture to cause decomposition; in such cases the manure should be placed at such a depth as that it will decompose in season for the wants of the crop.

There is a fear in the minds of a good many farmers, that if the manure is spread on the surface, that there will be a great loss by evaporation. But it is the opinion of Dr. Voelcker "that the loss by evaporation of ammonia is very small when the manure is spread on the ground, the loss by evaporation of ammonia is when the manure is piled, and rapid fermentation is going on," and further he says, "that the great loss is by the washing of rains," and that the most advantageous way of applying manure would be on the surface, that it may be washed into the soil, by which means its distribution is more uniform than when ploughed in.

There have been some advocates of winter spreading manure. I was very much interested in reading a short piece written by the editor of the "Country Gentleman," published in that paper of the date of January 16, 1868, upon this very subject, a part of which I will quote:—

"We often hear the objection that manure will wash away and be lost. We have found this objection to be groundless, unless it is spread in the bottom of hollows, or swales, or in the channels of streams. As soon as the snow melts or the rain falls, there is always enough of unfrozen soil at the surface to absorb the dissolved manure. Even when placed on steep hillsides we have never found the enriching effects of the manure to extend down the surface more than three feet on grass lands. Those familiar with the process of irrigation are aware that the large quantity of water used for this purpose has its fertilizing portions quickly abstracted from it by the grass among which it runs. After several years' trial, we have become satisfied that winter manuring is much better than applying just before the ploughing is done. At the same time that the injury to the soil in spring by drawing heavy loads upon it is avoided."

Although it seems to be the opinion of most sensible farmers at the present day, that surface application is the most benefi-

cial, yet it appears to me that if long or coarse manure is to be used at all, it should be buried so deep that it may receive that chemical action which is constantly going on in the soil in order to reduce it to a condition that shall render it perfectly adapted to the nourishment of the growing crop.

Thus it seems we can make no rule for the application of manure, which shall hold good in all cases. The true way will be to follow the example of the painter, who "mixed brains with his paints;" we must mix brains with our manure.

JNO. M. SMITH.

This Essay was followed by a lengthy discussion, which continued till 1 o'clock, when it was laid on the table, and the Board adjourned.

FOURTH DAY.

The Board met at 11 o'clock, A. M., Mr. SEWALL, of Medfield, in the chair.

Mr. Hubbard submitted the following Report, upon

THE HAY CROP.

In calculating upon the agricultural interests of any section of country, one of the first things to be considered is, what crops are best suited to the soil, and at the same time what ones will bring the greatest returns for the amount of capital and labor expended.

On the fertile prairies of the West the farmer makes the wheat or corn crop a specialty, because he finds the soil better adapted to those than to any other crop he can cultivate. With the Massachusetts farmer, generally, it is far different. There are some sections, near our large cities, where the soil is easier of cultivation, where it can be highly manured, and where vegetables can be easily and with small expense put into the markets; there the cultivator of the soil will find gardening far more profitable than to give his attention to the raising of stock, or to the cultivation of those crops that are needful for their support. But with most farmers the grass crop is the important one, and the one to which he must devote a good share of attention if he would succeed in his business.

In considering this subject, there are three important things which should receive attention, viz. : the importance of the crop ; how it can be improved ; and the best mode of securing it.

Statistics show that the value of the hay crop in Massachusetts, in 1865, was \$13,195,274, and the value of neat stock, horses, mules, asses and sheep, was \$19,854,580 ; so that for every dollar's worth of stock there was less than sixty-seven cents worth of hay, which will at once be seen to be a small allowance when we consider that there is a large number of horses and many cows and oxen that are fed on hay and other articles of food almost and many of them the entire year. This deficiency must be made up from other articles of food, and to a great extent from corn and the smaller grains, some part of which are raised in our own State, at a much greater expense than the same value of hay. But large quantities are transported from the South, and much larger from the West.

Taking into account the number of animals in Massachusetts and their value, which are dependent to so great an extent on the hay crop for their support, I think no one will for a moment question its importance, or fail to exclaim that this truly is an important one, and should receive a greater share of attention from the Massachusetts farmer than heretofore, and that he will not only endeavor to increase the quantity, but also the quality, and at the same time its value.

Hay, for the support of stock, is what manure manufactured upon the farm is to the farm—the foundation of its productiveness. It is the chief food to be relied upon for the support of our animals while the earth is bound by the frosts of winter, or ceases to furnish herbage to be cropped by the animals themselves.

Statistics show that in 1865 there were in the State 682,284 acres of grass land mown, and that the product was 622,671 tons ; or about 1,825 pounds per acre, if we take the entire crop of the year. This shows a small yield, and far less than it might be. It was stated by a member of this Board, that a man owning four acres of grass land out from it last year twenty-eight tons of well cured hay. This may seem a large statement, but it was further stated that he kept fifteen horses, and put all the manure made from them upon this piece of land. The crop

was taken off three times during the season, which shows what can be done under a high state of cultivation.

All our grass land cannot be thus highly manured or be made to produce in such large quantities. But with proper attention, and improving all the resources of the farm for making and saving manures, no one will for a moment doubt the quantity can be greatly increased, and at the same time the quality greatly improved. One great difficulty arises, and that is from neglect. There is a continual cropping, and nothing returned to supply the waste.

The great law of compensation requires that where there is a continual taking from, there should be something added, to supply the deficiency. Everything about the farm for manufacturing and composting manure, should be carefully attended to, and the application be made to the grass lands, not however to rob the other crops, but to give this that share of attention which its importance demands. It is a common practice with many, to get what they can from year to year from their grass land, without doing anything to increase its productiveness, or to restore its constant exhaustion. If nothing else can be done, and the soil is suitable for it, let there be applied yearly, or once in two or three years, a small quantity of plaster, which will richly repay for the expenditure. Wood ashes, lime, or some other fertilizer may be applied with beneficial results; not, however, to lose sight of the manure to be made upon the farm.

Wet meadow lands are greatly improved by drainage, and the application of sand, or a sandy loam, with a further top-dressing of manure; and at the same time a sprinkling of grass seed. In this way the quantity, and at the same time the quality are greatly improved. I have known land that did not produce enough to pay the expense of cutting the grass, that by drainage, and the application of sand, was brought under the plough, and made to be exceedingly productive; and some that was drained and top-dressed simply, that produced two bountiful crops a year, and also of an excellent quality. Let farmers who have such lands consider this subject, and apply to practice what their own good judgment dictates.

When the grass crop is grown, this question arises, What is the best time for cutting, and the best mode of securing the

crop? Steamed hay is said to be more valuable for animals. Now there is no doubt but what the nearer the hay is to the grass, the more nutritious and valuable for food. It is a common remark, that rowen is the most valuable hay for milch cows; and why? Because it is cut when tender, and possesses more of the nutritious qualities. This seems to be conclusive evidence that the first crop (and on most of the grass land the only one cut with the scythe, or machine,) should not be allowed to stand too long, until it becomes tough, and woody, and loses a great share of its nutritive qualities. It is a commonly received opinion, and probably a correct one, that the best time to cut grass is when it is in blossom.

It is evident that all cannot be cut at the most suitable time, so that it becomes the farmer to consider whether the loss by standing too long, will not be greater than by cutting too early.

I am decidedly of the opinion, that many farmers suffer greatly by letting grass stand too long, until it becomes tough and wiry, and loses most of its nutritive qualities. Economy demands that the work of haying should be commenced in season; that a suitable amount of help be procured, and the work pushed forward with energy. With the mowing machine, tedder and horse-rake, the work is carried on with greater ease and rapidity, securing the hay in many instances in much better condition. The hay should be dry enough to keep, but overdrying proves injurious, by lessening the nutritive qualities, and rendering it stiff and wiry.

Great care and the exercise of judgment need to be brought into requisition in order to secure the crop in the best condition. This cannot always be done on account of the unfavorable condition of the weather, but it should claim our special attention. I have not spoken of the different varieties of grass, or the time and mode of seeding, as these will vary in different localities. But if I have said anything to call attention more particularly to this branch of farming, or to quicken the energies of any so that they may cause their lands to produce two blades of grass where but one grew before, I shall be satisfied, and feel that I have contributed my mite to improve the agricultural interests of Massachusetts.

NEWTON S. HUBBARD.

After some discussion, the Essay was laid over for its second reading under the rule.

Mr. Moore then submitted the following Report, upon

SPECIALTIES IN FARMING.

The Committee upon the above subject submit the following remarks upon it:—

In considering the best methods of farming, the cost of production, the economy with which a crop can be grown without too great exhaustion of the soil must be taken into account, for herein partly consists good and economical farming.

Now it is well understood, and does not require an argument even to convince the public, that it costs more in proportion to produce one bushel of wheat, corn or other grains, or one bushel of any of the varieties of vegetables, or one box or barrel of any of the fruits, than it does one thousand or more; and there is also nearly the same labor in cleaning and finishing up after a small quantity as there would be from a large one. If this proposition is true, and there is no doubt of it in the minds of your Committee, it would follow as a certainty that it would be better to produce a smaller number but larger quantities of one or more special crops, for by that means the cost would be less, and leave a larger margin for profit to the grower. To use the words of one of the ablest sons of Massachusetts, "success is a duty." Now, to be successful, it will, we think, be necessary to direct the attention to a less number of the various branches of this, the oldest and most extensive business in the world.

Can you expect any person, even of great ability, to succeed and attain that proficiency in all the different branches of farming that he otherwise would if his attention was directed to a few special crops?

Suppose a person undertakes to breed sheep, cattle, horses and swine, any of which, to be successful in producing the finest animals, requires a long experience, a partial knowledge of anatomy, or conformation of the animals, so that he may be able to select proper animals for breeders, and a knowledge of feeding in all its details, to be able to rear the progeny to greatest perfection; to have a dairy for supplying the market with milk, or for the production of butter or cheese, which would require a different method of feeding to produce those articles most

economically ; to grow all the varieties of grain, potatoes and other roots, which would require a knowledge of the special wants of each of those crops, including soils, manures, varieties and cultivation ; to cultivate the various sorts of fruits, the production of which in perfection requires that a man be something of a horticulturist ; and to attempt market gardening, which is really a full trade in itself.

Now to be able to do all the foregoing to perfection would require more energy and brains than falls to the lot of any man ; and we should at once decide that no one could do all that we have mentioned, and do them well, or could attain to that degree of perfection which should be our constant aim.

In the mechanic arts it was found necessary, a long time ago, for the purpose of becoming skilful, to divide the subject into many trades. And successful manufacturers have found it advantageous to subdivide still more, as by that means their workmen can attain a greater proficiency in their business, and do it better and more economically. This the chairman of your committee found well illustrated in a recent visit to an extensive machine shop, where, in the making of a simple cotton spindle, one man forges, another fits, and still another grinds it, so that each spindle goes through at least three hands before it is set up in the spinning frame.

Now we claim that the business of farming is at least as extensive, varied, and requires as much skill for success as the mechanic arts. In the latter it has been found necessary to so divide the business that a man may become master of one branch. Should we not follow their example, and devote our time and attention to fewer branches of our business, and thereby master some particular branches and make them a specialty ?

As another illustration, we will take the cabinet-maker, who undertakes to make a chest or bureau ; he measures and cuts his lumber, planes and fits the pieces, puts them together and completes his work. This is a certain amount of skill applied to the raw material, and will produce a certain result, according to the skill applied ; there is no element to step between and prevent it.

But how is it with the farmer ? Can he measure the amount of rain he desires for his crops and have it from the clouds and

no more, control the degrees of heat and cold, the quantity of sunshine, wind, and the length of the season to mature his crops? Certainly he cannot. He can only bring into use his long experience and observation. He does some brain work, and the result is, if he has made a specialty of some crops, and has studied their habits and particular wants, has indeed mastered his subject with those particular crops, he will succeed: but if he undertakes to dabble in every branch of farming, he will not be likely to attain any great skill in producing any particular crop.

How is it in the professions? Does any one succeed and become eminent until he has devoted almost his entire energies to his particular business? Certainly not. Such application is required to make Choates, Jacksons and Beechers, who, if they had undertaken all of the professions, very likely would not have attained much eminence in either.

Husbandry, like mechanic arts, means many trades combined under one name, too many for any one man to perfectly master; therefore, let him give his attention to some few branches as a specialty.

When we desire information about any particular crop, to whom do we go to get it? Why, certainly to the man who has studied its habits and wants, and made it a specialty. Who succeeds the best with any particular crop? Is it not the man who raises it largely, and gives his attention to it, who knows its habits, and how to grow it?

We are aware that it has been popular to advocate mixed farming, or in other words to raise a little of everything, which oftentimes in its results, means not much of anything. We are satisfied that it would be better to raise a smaller number of crops, and those in larger quantities. We find in all farming there must be some leading articles to sell, for money must be had to pay for labor, groceries and other articles, and that can be got more readily where some crop is grown largely for that purpose. And therefore we have come to the conclusion that the quicker our farmers devote their attention to a few leading articles, studying their habits and wants thoroughly, and making them a specialty, the better and more successful will they be individually as farmers.

JOHN B. MOORE.

AVERY P. SLADE.

CHAS. C. SEWALL.

The Report was laid over, under the rule.

Mr. King, from the committee on the connection of the Board with the Agricultural College, submitted the following :

Whereas, The Massachusetts Board of Agriculture desires by all means in its power; to secure to the people such an agricultural education as will enable them to develop the agricultural resources of the Commonwealth, and as it desires especially to promote the welfare of the Agricultural College, and insure its success ; therefore,

Resolved, That Charles L. Flint, the Secretary of this Board, be authorized to deliver a course of lectures at the Agricultural College, or to discharge such duties connected with the instruction of the students at that institution as the trustees may assign to him : *provided*, that such services do not conflict with his duties as Secretary aforesaid.

Resolved, That it would be conducive to the interests of the Agricultural College, and add to the efficiency of this Board, to hold one meeting annually during the summer, at the college.

Resolved, That such portions of the library at the Secretary's office, as may be useful to the students and are not required in Boston by the Secretary for his own use, be transferred to the Agricultural College, and that Marshall P. Wilder, Charles L. Flint and Levi Stockbridge, be a committee to determine what portion of the library shall be removed.

The Secretary is instructed to certify a copy of the Resolves to the trustees of the Agricultural College.

This Report was unanimously adopted.

Mr. Hyde, of Lee, then submitted the following Report, upon

A P P L E C U L T U R E .

Fruit is so comprehensive a term, and an essay on fruit must either be so general in its statements or so lengthy in its details, that the Committee to whom this subject was intrusted for investigation have ventured to confine their attention to that representative fruit, the apple. By this neglect of the other fruits we intend no disparagement to them. We love a buttery pear and a fragrant peach, and the plum and cherry and the smaller fruits are always welcome at our table, and we regret that our time will not allow us to pay our respects to them all ; but for the present we must confine our attention to the king of the

fruits, the apple. As bread is the standard among articles of diet, so the apple is the standard among fruits. Other fruits are good in their season, but their season is comparatively short. The apple lasts through the year, the Roxbury Russet often lingering with us till the early harvest puts on the yellow tinge of maturity. True, for the past four years the apple crop in New England has partly failed; but this failure is the consequence of causes which are temporary, and we doubt not that the promise that "seed-time and harvest shall continue to the end of the world," is as applicable to fruits as to grains. Without stopping to discuss the causes of failure, we may say, in passing, that the preponderance of testimony of the keenest observers favors the belief that the severe droughts of 1864-5-6 so robbed the apple-tree of its juices that it failed to perfect the fruit; and so much was the constitutional vigor of the trees affected by these successive dry seasons, that the wet summer of 1867 found them too feeble to bring forth much fruit, or even to blossom freely, though the health of the trees improved greatly under its moist skies. We make no pretensions to the ken of prophets, but we confidently expect another year will witness a bountiful crop of apples. The loss to the orchardist during these barren years has, however, not been so great as might be supposed. With apples at five and six dollars per barrel, and cider at eight and ten dollars, the producer has little cause for complaint, though he harvests only half a crop. The little, knotty, refuse apples commanded a higher price for the manufacture of cider the past autumn than was paid for good dessert fruit in the years of plenty.

OLD ORCHARDS.

The first point to which we wish to call attention is the renovation of the old orchards, planted by our fathers, some thirty, some sixty and some an hundred years since. Such orchards may be seen all through New England, with ugly, dead branches projecting out here and there, with trunks moss-bound and often rotten at the core, apparently cumberers of the ground, and certainly a deformity to the landscape. The question is, Shall we dig about and dung them or cut them down? This question does not admit an answer of universal application. Though we cannot put an old head on young shoulders, we may put a new head on an old apple-tree; but whether it will pay or not

depends upon the quality of the apples, the condition of the trees and their former culture. If the orchard is one of grafted fruit, that has been well cared for and still shows manifest signs of decadence, it may as well be consigned to the woodhouse. There is no doubt but that grafted fruit, in elaborating its large size and delicate flavor, makes large drafts both on the tree and soil, and therefore sooner exhausts the energies of both. Like the roué whose vital powers have been exhausted by a life of wanton pleasure, when once the constitution gives way, no medicine can restore it. The native trees, on the other hand, not having been thus exhausted, have, even in their dilapidated condition, a reserve of constitutional force, and may be rejuvenated, by pruning, grafting and tillage, so as to pay well for the expense. A new top can as easily be put on an apple-tree as a new covering on an old umbrella. We have only to cut away the old, decaying branches and let some of the most vigorous suckers take their place. These suckers furnish just the right stocks for grafting, care being always taken to leave sufficient branches to furnish breathing apparatus for the tree. At the same time the old branches are lopped off, the trunk should be thoroughly scraped with a hoe, the suckers around the roots removed, and the whole tree washed with strong soapsuds. We have found soft soap as acceptable to trees as to men. We have sometimes used the pure article, and have never known any damage arise from its use on the trunks of old trees; but our more common practice has been to dilute the soap with half water. The effect of soapsuds on a tree is much the same as on a dirty urchin's face. As the unkempt and unwashed boy is hardly recognized after a thorough scouring, so the washed tree puts on an entirely different look. The bark becomes smooth and glossy, and is no longer the home of insects which formerly preyed upon the juices of the tree, but performs its designated office of aiding the leaves in their inspirations and expirations. The bark has much the same relation to the tree that the skin has to the animal. As we do not expect an animal to thrive, the pores of whose skin are stopped by dirt, scabs and vermin, neither must we expect a vigorous tree when the bark is scaly and full of cocoons and insects. If the soap is applied so freely as to run down among the roots, it will not be lost. It is one of the best stimulants that can be given to these roots, and acts on

them as beneficially as the wine recommended to Timothy "for his often infirmities." We have sometimes seen whitewashing recommended for apple-trees, but we should as soon think of whitewashing a man. Lime may destroy some insects, but it stops the pores of the bark and deranges its respiratory functions, and must induce disease. We have found the latter part of May or the first of June the most propitious season for applying the soap, as at this time the bark lice are just being hatched out and are destroyed most effectually. The beetle, also, which lays the eggs for that terrible pest of the apple-tree, the borer, is at this season prowling about seeking where he may puncture a nest for his ovum, and turns up his nose in disgust at the villanous smell of soft soap. If by chance the eggs are already deposited when the soap is applied, their vitality is destroyed. We have never been troubled with the bark louse nor with the borer when we have thoroughly soaked our trees, and at the proper time. If the bark lice are not totally destroyed by the washing in May, a second crop is hatched out the latter part of July, and another washing at this time may be necessary.

Some recommend ploughing an old orchard as a sovereign remedy for the disease of its old age, and we grant that the first year after an orchard is ploughed, it generally bears well, but it is like the flickering of a lamp just before it is extinguished. Our observation has been that the ploughing of an old orchard does not give it permanent vigor. The severe root-pruning to which it is subjected by the action of the plough, induces the formation of fruit-buds, and a large crop of fruit follows for one and possibly for two years, but the trees mutilated in their roots, are soon exhausted by over-production, and speedily decay. The plough is a rude instrument for root-pruning. As Ik Marvel says, "It makes butcher work where nice surgery is demanded." The suggestion of Holy Writ, to dig about and dung the trees, is far preferable. This "nice surgery" is more expensive, but whatever is worth doing is worth doing well.

Some form of manure is absolutely essential for rejuvenating an old orchard. A tree cannot, like an animal, rove around in search of food. It does indeed send out innumerable little rootlets, and they are most diligent foragers, but their range is limited, and foraging for fifty or a hundred years in the same

locality finally becomes poor picking, unless the soil is often replenished with the food which the tree may need. In a state of nature this supply of food is furnished in a good measure from the tree itself, in the decaying leaves and fruit; but if we carry this fruit to the cellar and carefully clear the ground of the leaves, it is robbery, unless we return some equivalent in the shape of compost. What this compost should be must be determined in part by the nature of the soil. An universal panacea has not yet been discovered, either in medicine or agriculture, but we are inclined to the belief that wood ashes contain most of the ingredients which apple-trees require. Certain it is, that a compost made of one part ashes and three parts muck, has answered a good purpose in our own orchard. Some soils might require an addition of more lime than is found in wood ashes, and in such case if the refuse plastering from old houses can be added to the compost heap it will prove a benefit as well as an addition. Many of our old orchards are doubtless past recovery. Neglect and old age have so reduced their vigor, that no medicine will avail for their restoration. Good nursing will, however, do more for these old settlers than we are wont to suppose. We know of an old orchard in one of our mountain towns, how old we cannot say, but it looked old to our youthful eyes some forty years ago, that for the past twenty-five years has been made to produce very fair crops of good fruit. The original trees were chance seedlings, planted by one of the good clergymen of the olden time, probably with a view of furnishing a little cider for himself and guests, for not one tree in twenty furnished any fruit fit for dessert. When this orchard came into the possession of the late Lieut. Gov. Hull, he dug around the trees, dumped a load of chip manure around each tree, gave them a liberal sprinkling of leached ashes, pruned and grafted, planted potatoes around each tree in a circle of some twelve feet in diameter, so as to insure a stirring of the soil, and some return for his labor, and the result was not only a large yield of potatoes, but the rejuvenation of the trees, and for a series of years some of the finest fruit that had ever been raised in the town. But we cannot depend upon our old orchards forever. This would be as unwise as depending upon our Shaker brethren "to multiply and replenish and fill the earth." There is a limit to

the producing energy of trees, however well cared for, and we must resort to planting

YOUNG ORCHARDS.

Where shall we plant them is the first question. We answer briefly, in a good soil and a sheltered situation. The apple is hardy, has a wonderful power of adapting itself to any soil and situation, is never "staky," but puts forth its best energies wherever planted. We have admired sometimes seeing the seedling apple-trees struggling for existence among the rocks, or by the side of the road, browsed upon by the straying cattle, but never saying "die." It is a mistake, however, to suppose that the apple has no choice of location. There is a congenial home for the apple as well as for man. Whatever soil will produce a good crop of corn, will also produce a good crop of apples; but as the roots of trees penetrate much more deeply than those of corn, it will generally be found expedient to underdrain most of our sites for the orchard, certainly if the subsoil is of a cold, clayey nature. We were so unfortunate, some twenty years since, as to have a railroad laid out through a young orchard, just coming into bearing condition. The soil was of a gravelly nature, and on removing the trees and especially on removing the soil for the use of the road, we were surprised to see the depth to which the roots ran. They were luxuriating at the depth of six and eight feet. In a clay soil they might not have penetrated so deeply, but they should certainly have the liberty of wandering whither they please. We have read of a Pennsylvania farmer placing a flat stone under his apple-trees, in order to keep the roots near the rich surface soil, but this is not in accordance with "the freedom of the will," and we doubt not, when the roots reached the extremity of the stone, they turned downward in search of moisture and nourishment. Certainly here in New England we have little occasion for planting stones when we plant our apple-trees, but have need rather to remove every obstruction to the free wandering of the roots. There is very little of our New England soil that will not be benefited by a liberal application of manure, before an orchard is planted upon it. Some of our western fruit-growers complain that their soil is so rich naturally, that their trees luxuriate in a growth of wood and

foliage to the exclusion of fruit ; but we hear of no such complaint at the East. The site for an orchard should be deeply ploughed either with a Michigan or subsoil plough, and the manure thoroughly incorporated with the soil before the trees are planted. No subsequent culture will atone for the want of this previous preparation. The balance of testimony is in favor of keeping the orchard under the plough for a few years, either letting it lie fallow or raising root crops, but no grain. This has been our practice generally, but we have tried keeping one orchard in grass, digging around the trees occasionally with a spade, and top-dressing the grass annually, and the experiment has succeeded beyond our expectation. The trees may not grow so rapidly nor come into bearing so early as where the land is ploughed, but the trees are very healthy and have produced as generously as other orchards, though we have not failed of cutting two crops of grass annually from the same land. When so much is taken from the soil, generous returns must be made. If we cannot get something for nothing, we certainly ought not to expect two somethings for a cipher.

TRANSPLANTING.

How we shall plant our trees, is well answered by that poet of nature, Bryant :—

“ Come, let us plant the apple-tree.
Cleave the tough greensward with the spade ;
Wide let its hollow bed be made ;
There gently lay the roots, and there
Sift the dark mould with kindly care,
And press it o’er them tenderly,
As round the sleeping infant’s feet
We softly fold the cradle sheet :
So plant we the apple-tree.”

Transplanting is trying to the constitution of trees, however carefully “ we sift the dark mould ; ” but in the rough manner it is usually performed, the trees have much occasion to say, “ spare us from our friends.” Our radical reformers do not uproot society more cruelly than some rude hands transplant trees. They seem to forget that a tree is a thing of life, that the rootlets are tender as “ infants’ feet,” and that every mutilation of the trunk is as bad for the tree as phlebotomy ever was

for man. The secret of transplanting is to handle the young trees as carefully as we do sleeping infants, and they (the trees,) can be put from one bed into another without knowing it. Their new bed should be made wide and deep, and if the slats are made of old ribs and other bones, all the better. Over these bones the soft mould should be sprinkled, and if the roots are carefully laid upon this and well tucked up with surface soil, our word for it, the trees will grow like willows of the brook.

VARIETIES.

Of the thousands of varieties of apple-trees in the catalogues of our nurserymen, which shall we select for a New England orchard? The answer to this question must vary somewhat with circumstances. The theory generally has been that winter fruit paid much better than summer; but if a sufficient market is near by, our experience is in favor of cultivating a due proportion of summer apples; and whether near to or remote from a market, enough Early Harvests, Red Astrachans and Early Sweet Boughs should be raised for family use. In the bilious dog-days of July and August, nothing is more grateful to the stomach than the acid of the apple. It is cheaper than pills and powders, and (begging pardon of the doctors on the Board,) far more effectual. A quarter of a century since some city cousins were making us a summer visit, and very naturally wanted some apples, and we scoured the home orchard and neighboring orchards in vain for some palatable fruit, and we resolved that another decade should not find us in this destitute condition. It was a mistake of our fathers that apples in the summer were unhealthy. On the contrary, ripe, juicy fruit is never more healthful than in the warm season; and that nature craves it is manifest from the multitudes of lawless boys and, we are sorry to say, men, that are so eager to club the trees as soon as the fruit, by its tinge of red or gold, shows signs of maturity. The market demand for fruit at this season has also greatly increased, so that we are inclined to think a good sprinkling of early apples in the orchard will be found profitable.

For autumn use, the Early Strawberry, Golden Sweet, Graevenstein, Fall Pearmain, Porter, Fameuse and Fall Pippen we have found to thrive well, and are essential in every well-appointed orchard. To the above named dessert fruits we wish

to add the Drap d'Or, as a cooking apple of the most hardy and productive kind. During these late years of barrenness the Drap d'Or has never failed to yield bountifully, and the Dutch Mignonne has been like unto it. The trees of both these sorts seem to possess a constitutional vigor that enables them to bear fruit even in unpropitious seasons.

The name of good winter apples is legion, for they are many. We put the Rhode Island Greening first, as the tree is vigorous, produces an abundant crop annually, and not biennially, as does the Baldwin, and the fruit, both for the dessert and cooking, if not first-rate, falls but little short of it. The Spitzenberg has a far higher flavor, and for cooking is No. 1, but is too hard and indigestible for a dessert fruit, and the tree has not so vigorous a constitution as to warrant planting it in large quantity. The Hubbardston Nonsuch is excellent, but we are not ready to yield it the title of Nonsuch if that title means none so good. The Yellow Belle Flower is also excellent, if planted in a sandy soil. The Northern Spy is a great accession to our winter fruits, as it is a crisp, well-flavored fruit, good in January, is a late keeper, and the tree seems hardy; but with us the fruit has not been uniform, some specimens being large and fair and others small. The King of Tompkins County also promises well, but we have not tried sufficiently to pronounce with confidence upon its character. "Confidence is a plant of slow growth" among apples as well as among men. We are aware that we have left out the Roxbury Russet, Tolman Sweet and many other winter apples in the above list; but time would fail us to notice all that deserve honorable mention.

We desire to add a word about the preservation of apples, and their conversion into that much abused, but when taken temperately, most healthful beverage, cider, but we fear we have already transgressed our limits. We must however express our honest convictions that the manufacture of cider is worthy of a more careful consideration by the farming community than it has hitherto received. The juice of the apple is capable of being converted into a beverage little if any inferior to that manufactured from the grape. The aroma of cider is not equal to wine, but the acid is congenial to most stomachs, and is a great promoter of digestion, and so far as health is concerned, we place cider above wine. When the price was

one and two dollars a barrel, much care in its manufacture for a market was not justified, but now that the price is quadrupled, we hope to see unripe and rotten apples rejected from the pile which is to be ground for cider, and the use of musty straw entirely dispensed with. The musty barrel has also been tolerated equally with the musty straw. Let the principles of cider manufacture be studied as carefully as the principles of manufacturing wine—and they are nearly identical—and this branch of farming will take rank where it deserves.

For the Committee,

ALEXANDER HYDE, *Chairman.*

The Essay having been read and discussed, was laid over.

Mr. Birnie presented his Report as delegate to the Middlesex North Society, which was read and accepted.

Mr. Porter presented the following Essay, on

DRAINAGE.

The practice of draining is still in its infancy in this country, yet the time is not far distant, when it will be looked upon as a very important part of our agricultural operations. Thousands of acres in New England still remain unproductive, for the want of thorough draining.

In the management of soils it is necessary to their fertility to cause the rain water falling upon the surface to filtrate equally and readily to a proper depth, and to convey it away without allowing it to accumulate there. This is the object of draining. And it is accomplished in case of stiff soils, by causing the clay to shrink and become pervious through the joint action of the drains and evaporation, and in other wet soils merely by carrying off the surplus water below, thus enabling the quantity added above to penetrate regularly downward. When this result is attained, all other necessary improvements may be successfully carried out and the most profitable system of cropping adopted. A saving of seed, labor and manure will then be effected, and the numerous advantages arising from a dry and more friable soil will be secured.

The object sought to be obtained by various operations, as well as the circumstances to which such operations are applicable, would be made plain if the principles upon which the

success of each operation depends were understood. The merits of subsoiling or deep ploughing, for instance, are often argued without reference to any principle whatever, and erroneous conclusions are no doubt frequently formed in consequence. Whereas, if the data necessary to lead to a correct view of the subject were examined, it would be observed that all soils liable to become too firm, require perhaps the application of all the means at the command of the farmer, to keep them open and to bring and return all their parts to the required depth under the influence of air and water.

The great object of draining and other improvements, is to promote fertility ; and subsoiling, and deep and perfect mixing and comminution of the surface soil must, as auxiliaries to thorough draining, be highly beneficial. If these prove inadequate, other means, such as the admixture of matter, will be required in addition.

If the soil is light and naturally porous, all its parts must be already more or less under the influence of air and water, and it possesses the advantages which subsoiling and deep tillage are calculated to confer. These operations would, therefore, be likely to prove less beneficial than in the case of stiffer soils.

Many soils, though absorbent in their natural state, are much benefited by deep ploughing or subsoiling, especially when green crops are to be grown, so that the ready filtration of water through them without draining is not an unerring test, as everything depends upon their nature, specific gravity, their locality, and the system of cropping and management. It is certain that some light soils require no deep stirring to keep them open, or to bring them into their utmost state of productiveness ; but, on the contrary, they often require compression and careful management to make and keep them sufficiently firm ; hence a heavy dressing of clay or marl which assists in consolidating them and increases their capacity for retaining water, as well as in supplying inorganic matter in which they are deficient, is often found to contribute greatly to their fertility, and to enable crops to be grown upon them, for which they would otherwise have been unsuitable. Thorough draining, however, by which the soil can be made perfectly absorbent and dry throughout, is of much greater importance than any

other method, or than all other methods combined, as the necessary improvements can in most instances be effected by it alone.

This mode of draining has already been productive of immense advantage in those districts where it is generally applied, and on its extension and perfection the future success of farming in many places depends. Hence the importance not only of thorough draining being undertaken on all wet soils, but so as to make it fully and permanently equal to the purpose.

The first thing to be attended to in draining is to procure an outfall to carry off the water from the drains at any season. Without this they must be partially or totally inefficient, and it is scarcely possible that they can be permanent. In most places the only difficulty in providing an outfall, where one is not already provided, is the expense, which would often be considerable.

Draining, as a general rule, should be commenced at the lowest part of the ground; and when the water is effectually cleared away therefrom at all times, a good outfall will be easily obtained for the higher lands.

When the land is level it is important that ditches should not only be so situated as to allow the water to be easily and naturally brought into them and readily carried off afterwards, but that they should be cut to a regular inclination in the bottom, and their width suited to the quantity of water to be conveyed. The main ditches should be as straight as possible. Every deviation from the direct line increases the distance to the outlet and lessens the rate of inclination.

Every portion of the country appears to be abundantly supplied with materials of some description for draining. Where timber is scarce, stones are abundant; or, if both are wanting, then there generally is an excellent deposit of clay from which tile may be made. It is an established fact that under-draining will pay all reasonable expenses incurred in its construction in the course of three or four years, and not unfrequently the first year alone, by the increased productiveness.

It therefore behoves the farmer to consider well what kind of drains his present means will justify him in making. The digging and filling will cost about the same for any kind except tile. The difference in cost then will depend upon the material

employed. If stones are to be hauled two or three miles, then perhaps wooden drains would be cheaper, and will last five or six years. But if stones are abundant on the field to be underdrained, or in the adjoining fields, it would perhaps be a matter of economy to employ the stone, for two reasons. First, stone will make a drain which will serve the object intended; and, second, the surface of the field will be cleared of a great nuisance and hindrance to a more perfect system of cultivation. Stone drains should never be made less than three feet deep and one foot wide at the bottom. Stone should be filled in to the depth of one foot at least, and then be covered with brush, straw, leaves, or some such material, so as to prevent the dirt from falling in and filling up the interstices.

The manufacture of drain tile has of late been very much on the increase, so that where material for the manufacturing is easily obtained they can be furnished at less cost than stone, and when laid down answer the object sought for perhaps better than anything. The cost at present is about two dollars and a half per hundred for three-inch tile, and less according to the size.

There is a new method of making tile from cement and gravel that I think supersedes all others for the main drain and outlet. These are made two feet in length, of any size, perfectly round, and when properly cured will last a lifetime. These are better adapted for conveying off surplus water than for draining, they being not so porous as those made with clay, and after being made a suitable time become very hard, almost like stone. The cost of these at the manufactory is considerably more than clay tile, perhaps twice as much; but considering their durability, I think them the cheapest for the main drain and outlets.

Perhaps, at this point, I can better illustrate this subject by giving an extract from the experience of one who has for over thirty years been intimate with all methods of draining. I refer to Mr. Johnston, of Geneva, N. Y. At one time esteemed a fanatic by his neighbors, he has come of late years to be generally known as the father of tile-drainage in America. After over thirty years of precept and twenty of example, he has the satisfaction of seeing his favorite theory fully accepted, and to some extent practically applied throughout the country. Mr. Johnston is a Scotchman, who came to this country over forty

years ago, and purchased the farm he now occupies, on the easterly shore of Seneca Lake, a short distance from Geneva.

With the pertinacity of his nation, he stayed just where he settled, through ill fortune and prosperity, wisely concluding that, by always bettering his farm, he would better himself, and make more money in the long run than he could by shifting uneasily from place to place in search of sudden wealth. He was poor enough at the commencement; but what did that matter to a frugal, industrious man, willing to live within his means, and work hard to increase them.

His farm, the first purchase, was one hundred and twelve acres of land, well situated, but said to be the poorest in the county. He knew better than that, however, for although the previous tenant had all but starved upon it, and the neighbors told him such would be his fate, he had seen poorer land forced to yield large crops in the old country, and so he concluded to try the chances for life or death. The soil was heavy, gravelly clay, with a tenacious clay subsoil, a perfectly tight reservoir for water, cold, hard-baked, and cropped down to about the last gasp. The magician commenced his work. He found in the barnyard a great pile of manure, the accumulation of years, well rotted. This he put on as much land as possible, at the rate of twenty-five loads to the acre, ploughed it in deeply, sowed his grain, cleaned out the weeds as well as he could, and the land on which he was to starve gave him forty bushels to the acre. The result, as usual, was attributed to luck, and anything but the real cause. To turn over such deep furrows was sheer folly, and such heavy dressings of manure would not fail to destroy the seed. But it didn't; and let our farmers remember that it never will, and if they wish to get rich let them cut out this article, read it often, and follow the example of our Scotch friend.

This system of deep ploughing and heavy manuring, wrought its result in due time. Mr. Johnston, after seventeen years of hard work, at last found himself ready to incur a new debt, and to commence laying tile drains. Of the benefits to be derived from draining, he had long been aware; for he recollected that when he was only ten years old, his grandfather, a thrifty farmer in Scotland, seeing the good effects of some stone drains laid down upon his place, had said, "Verily the whole

airth should be drained.” This quaint saying, which needs but little qualification; made a lasting impression on the mind of the boy, that was to be tested by the man to the permanent benefit of his country. Without sufficient means himself, he applied for a loan to the bank of Geneva, and the president, knowing his integrity and industry, granted his request. In 1835 tiles were not made in this country. So Mr. Johnston imported some as samples, and a quantity of the horse-shoe pattern were made in 1838, in Waterloo. There was no machine for producing them, so they were made by hand, and moulded over a stick. This slow and laborious process brought their cost at twenty-four dollars per thousand ; but even at this enormous price Mr. Johnston determined to use them. His ditches were opened and his tile laid, and then what sport for his neighbors. They made fun of the deluded man ; they came and counselled with him, all the while watching his bright eye and intelligent face, for signs of lunacy. They went by wagging their heads and saying, “ Aha ! ” and one and all said he was a consummate ass to put crockery under ground, and bury his money so fruitlessly. Poor Mr. Johnston ! He says he really felt ashamed of himself for trying the new plan ; and when people riding past his house would shout at him, and make contemptuous signs, he was sore-hearted and almost ready to conceal his crime. But what was the result ? Why, this : that land which was previously sodden with water, and utterly unfruitful, in one season was covered with luxuriant crops, and the jeering skeptics were utterly confounded that in two crops all his outlay for tiles and labor was repaid, and he could start afresh and drain more land. The profit was so manifest as to induce him to extend his operations each succeeding year, and so go on, until 1856, when the labor was finished, after having laid 210,000 tiles, or more than fifty miles in length. And the fame of this individual success going forth, one and another duplicated his experiments, and were rewarded according to their deserts. The horse-shoe tile was used by Mr. Johnston almost exclusively, for the reason that they were the only kind to be procured at first, and on his hard subsoil he found them all he wished for. He has drains that have been laid more than twenty years without needing repair, and are apparently as efficient now as they were when first laid.

His ditches are dug only two and a half feet deep, and thirteen inches wide at the top, sloping inward to the bottom, where they are just wide enough to take the tile.

Mr. Johnston says, tile-draining pays for itself in two seasons sometimes in one. Thus, in 1847, he bought a piece of ten acres, to get an outlet for his drains. It was a perfect quagmire, covered with coarse aquatic grasses, and so unfruitful, that it would not give back the seed sown upon it. In 1848 a crop of corn was taken from it, which was measured and found to be eighty bushels per acre, and worth at that time, one dollar per bushel; this crop paid not only all expense of drainage, but the first cost of the land. Another piece of twenty acres, adjoining the farm of the late John Delafield, was wet, and would never yield more than ten bushels of corn to the acre. This was drained at a great cost, of thirty dollars per acre. The first crop after this was eighty-three bushels an acre. It was weighed and measured by Mr. Delafield, and the county society awarded a premium to Mr. Johnston. Eight acres and some rods of this land on one side averaged ninety-four bushels, or the trifling increase of eighty-four bushels per acre, over what it would bear before those insignificant clay pipes were buried in the ground.

Mr. Johnston says he never saw one hundred acres in any one farm, but a portion of it would pay for draining. Mr. Johnston is a hard-working Scotch farmer, who commenced a poor man, borrowed money to drain his lands, has gradually extended his operations, and is now at seventy-five years of age, written to by strangers in every State in the Union for information, not only in draining matters, but all cognate branches of farming. He sits in his homestead, a veritable Humboldt, in his way, dispensing information, cheerfully, through our agricultural papers and to private correspondents. His opinions are therefore worth more than those of a host of theoretical men, who write without practice.

HENRY S. PORTER,
For the Committee.

This Essay was read and laid over under the rule, when the Board adjourned.

FIFTH DAY.

The Board met at 10 o'clock, A. M., Mr. BIRNIE, of Springfield, in the chair.

The annual meeting of the New England Society being held at the same time, at the rooms of the Board of Trade, it was voted to adjourn to 3 o'clock, P. M., to give members an opportunity to attend.

The Board again met at 3 o'clock, when it was voted to appoint a committee of three to appear before the Committee on Agriculture of the legislature, with reference to the bounties of the agricultural societies. Messrs. Wilder, Thatcher and Watkins.

Mr. Birnie presented the following Essay, on

FALL AND SPRING PLOUGHING.

Such is the diversity of soil and condition of the farms of Massachusetts, that it is impossible to lay down any definite rules for ploughing, which is, undoubtedly, one of the most important operations in the cultivation of the soil. The success or failure of the crop depends very much on the time and manner of its accomplishment. Much has been said, and at one time it was quite fashionable, to recommend on all occasions deep ploughing; but in more recent discussions on this subject we notice that our most successful farmers advocate the medium depth of six to seven inches, under ordinary circumstances. But each cultivator will be governed by the nature and condition of his own soil and crop. When a greater depth than seven inches is desired for drainage or for some kind of root crop, we would recommend the subsoil plough, rather than turning the soil to a greater depth. It is the result of our observation that the roots of most of the crops cultivated in New England will be found within five inches of the surface; the tap-roots of some penetrate to a greater depth for moisture only; the nourishment of the plant is obtained in the warm surface soil. Hence the advantage of applying the manure as near the surface, as it is possible to incorporate it thoroughly with the soil; manure buried eight to ten inches deep is of very little benefit to the growing crop. We are aware that it is the practice of some of the most successful tobacco-growers of the Connecticut Valley to plough to that depth; but the

quantity of manure applied is proportionately large, so that there is an abundance within five inches of the surface to supply the wants of the crop, and the balance is brought to the surface at the next ploughing. Their soil is a deep, sandy loam, with a subsoil that differs very little from the surface, except in its admixture with vegetable matter and cultivation.

In our climate, where we have but a few weeks in the spring to perform the various operations of carting out the winter accumulation of manure, ploughing and preparing the land for the crop, planting, sowing, &c., it is very desirable to do as much in the autumn as possible to relieve the pressure on those few exceedingly busy weeks. For that reason, if for no other, we would recommend to every New England farmer to do as much of his ploughing in the fall as he can find time to accomplish. Then he is comparatively at leisure, his teams are in good condition, the weather is cool, and both man and beast can perform more labor with less fatigue than in the spring.

Greensward should be turned in August or September, when the grass roots are in full vigor, and the weather is warm enough to produce immediate fermentation and decomposition of the vegetable matter contained in the sward. If not done as early as September, it should be left until late in the spring, when the grass is well started. We have for several years prepared our ground for oats and early potatoes in the fall, and have consequently been able to sow and plant as soon as the ground has thawed to a sufficient depth to allow the use of the harrow. The result has always been satisfactory. The earliest sown oats, other things being equal, have never failed to produce the best crop.

No doubt something may be done in the way of destroying worms and insects injurious to vegetation, that take up their winter quarters in the ground, by ploughing late in the fall. In that case, it is desirable to expose as much of the soil to the action of the frost as possible. In all fall ploughing we have found the best results from laying the furrow slice as nearly on edge as possible, or in other words, to expose the edge as well as the bottom of the slice to the action of the atmosphere. If any manure is left about the buildings, this is an excellent time to apply it to the newly ploughed ground. The frost and rains of winter will thoroughly dissolve and incorporate it with the

surface soil, and all that remains to be done in the spring is to harrow and put in the seed.

Heavy clay soil should not be ploughed when too wet. If stirred when in that condition, it is apt to cake or press into hard lumps, which it is almost impossible to reduce until again exposed to the action of the frost. Such soil requires a very nice discrimination to determine at what degree of moisture it is proper to introduce the plough. If too dry a great addition of power is required to perform the same work.

We have a piece of land that was ploughed last autumn when too wet, and to aggravate the difficulty, the water stood on a portion of it until quite late in the spring. The result was that the surface ran together and baked to such a degree, that it was found impossible to pulverize it, and the crop notwithstanding a very bountiful supply of manure, was a perfect failure.

WM. BIRNIE.

After some discussion, the Essay was laid over for its second reading.

Mr. Clement then presented the following Essay, on

NIGHT SOIL.

In this paper we shall assume, or rather affirm that great negligence is manifest on the part of many persons, and whole families even, in not using the precaution which sanitary measures alone obviously require, in order to protect their homes against an atmosphere rendered offensive to the nostrils, pestiferous, malarious, through the proximity of putrescent matter.

Decaying vegetables, or fermenting and dissolving animal manure, unprotected, emit quite as much effluvia of that nature, and more even, than a tolerably well bred and reared gentleman can endure for a brief period of time without experiencing unpleasant sensations. Of necessity there must be either large or small accumulations of human excrements somewhere in the vicinity of every one's dwelling-place; hence the importance of having a suitably constructed vault under every privy.

While we are ready to admit that on the part of some, much precaution and good judgment has been exhibited in the preparation of this not to be omitted adjunct to every man's domicile, we as unhesitatingly assert that with many this sanitary

measure seems not to have exercised their thoughts in the slightest degree.

“ Little houses ” we have not unfrequently observed standing out in bold relief and without any sort of an excavation in some instances, and in others the merest apology for one. In our judgment all such places should be complained of, or complaint entered against them under the act to protect the community against nuisances.

We have deemed it our duty to write somewhat pointedly because of the downright and palpable want of respect for and compliance with the laws of decency and propriety, which every one should observe, but to which many pay but little heed.

Let us now turn our attention to another aspect of the case.

That night soil is one of the more powerful stimulants to vegetable growth, it would seem to be an act of supererogation on our part to attempt to prove, for it is a fact conceded by every practical agriculturist who has had experience in the matter.

If proof should be demanded we can give our own experience and that of a score, more or less, of farmers who have used the article for many years.

That failures sometimes occur, in anticipated results, from its use may be attributable to two or more causes.

1st. The amount applied to a given amount of land may be, and in some instances has been too large. If there has not been much commingling of rain water or other weak liquids with the genuine article, we should say that one-fourth or one-third the amount in bulk which would be required in ordinary stable manure would be equally as good for an immediate crop.

2d. If for instance, a man, or men and team are sent to the city, being out two-thirds of the night and return with something like half a cord of slops, seven-eighths of which, or even more may be rain water or sink slops, and one-eighth or less the article which was sought, the result so far as paying for the labor is concerned will *not* prove in an eminent degree satisfactory. Again, if the application is made to warm and sandy soil and the season should prove *dry*, as we express it, probably a partial failure would ensue.

We have witnessed excellent results from an application to grass land as top-dressing ; but from observation and experience

we are led to believe that the safer and more economical, certainly the more sanitary, method of using, is to bury it in the soil with the plough, after mixing thoroughly with earth or peat, and just enough of either to facilitate the spreading evenly over the surface. Some prefer adding water and distributing broadcast directly from the cart, rather than compost before spreading. Some labor is saved by the last named method, which is worthy of consideration; and unless the material to be used contains some fertilizing properties, or the mechanical condition of the soil is improved by the addition, the extra labor may as well be dispensed with.

Every effort should be made on the part of citizens who expect tillers of the soil or others to act the part of scavengers, while they (the citizens,) are quietly resting on their couches, dreaming pleasantly, to facilitate the operation of clearing vaults by giving easy access, and also keeping tightly closed that water may not enter from the outside. It would seem to be the dictate of common sense that no pains should be spared in a dense population to prevent the escape of noxious odors which are liable, when neglected, to emanate from such depositories. When appropriate means are used to keep down offensive exhalations, the manure is correspondingly enhanced in value, so that two points are gained while aiming to secure the one which a salubrious state of the surrounding atmosphere imperatively demands.

Comparatively few, we apprehend, are aware of the great loss which is sure to ensue when the clearing of vaults, as they are ordinarily constructed, is not attended to in the spring or on the approach of warm weather, at which time fermentation and decomposition of privy deposits commences and progresses more rapidly than with any other manure. We have known instances where this clearing was omitted till autumn, and the additions were continually made through the summer; so large an amount had escaped by decomposition, evaporation and filtration, that scarcely more was then secured than might have been in the spring. Besides the waste and loss of nutriment to the soil which ought to have been saved and appropriated, the amount of air tainted by such exhalations will make a thoughtful and sensitive man shudder. Careless heedlessness, stench

and waste are not productive of pleasant reflections, and we turn from them in disgust.

We have heard of a man whose family comprised four persons, and whose possessions in real estate consisted of one acre of land and dwelling-house upon the same. The land was mainly garden, on which the owner raised "truck" for the family, and the whole lot was kept in a good state of fertility with the excrements of the four bipeds composted with *two cords* of peat, yearly. A supply of the last named article was kept constantly on hand, so that the vault received frequent additions. The chamber slops were all saved with care and thrown into the same general receptacle.

It need not surprise any one that two cords of excellent compost could be yearly made in that way, or that an acre of land could be kept in fine condition for the reception of seed by the yearly application of such a dressing.

Does any one complain that such is small business—that it is devoting much attention to a little matter.

Let us see how that is. Our wives, our daughters or our servant girls are continually engaged in what may appear in themselves as little matters. Sweeping a chamber, cleaning up a grease spot here, brushing down a spider's web there, washing a few dishes or taking a few stitches with the thousand and one little etceteras which have to be daily attended to, may not be regarded as of much consequence when separately considered, yet we all know that those things must be attended to promptly and in detail in order to make home appreciable. Now we are not sure that the gentleman of whom we have written devoted any more time or attention to his compost heap than sanitary measures would seem to demand. He certainly avoided all danger of complaint by the health officers, which cannot be said of all those who have "little houses."

In our limited travels we have seen many of those "houses" which were a big nuisance, and if complaint was not entered against them, somebody neglected a duty. Farmers, to be sure, are not often visited by health officers, but we do not believe in such a shadow of an apology as that for permitting what would be regarded as an intolerable nuisance in the city, to remain about their premises.

In this connection we will venture some wholesome advice in relation to this subject. If practicable, every farmer should have a *large* vault under his privy, the bottom and walls of which should be cemented and made water-tight. Let the vault be large enough to hold from one to two cords, according to circumstances, and extend back one way from the wall of the privy so far at least that a man can stand therein and shovel with convenience to himself. Let a pile of peat be kept at hand, that a little may be used often, by raising the trap-door or scuttle to the vault, and closing the same after use.

We write of peat because we regard that article as among the cheapest and best deodorizers and absorbents that can be obtained for such a purpose. Where peat is not to be obtained without great cost use any earthy substance which may be procurable. Better use dry clean sand than nothing; but whatever may be used let there be as little water in it as is practicable. The more free from water the substance used the less will be required to absorb the liquids. If shelter from storms cannot be provided for the material to be used, have it thrown in after a few days of dry weather.

Coal ashes may frequently be had in a dry state, and make a very good absorbent. Vast quantities of coal are used in all our cities or wherever fuel is purchased, used in furnaces in cellars and the ashes sifted in the cellar or shed, and may be preserved in barrels or boxes for winter use when other articles may be difficult of access. While there may not be much in the ashes alone to recommend them as a manure, they will serve to retain the nutritive properties of night-soil.

We would be particular in relation to using something with which to cover up, and that quite frequently the contents of our vaults, for two reasons: First, we know that great loss in fertilizing properties is the legitimate result when this is neglected; and secondly because that masses of putrescent matter in a state of fermentation fill the air with odors offensive to the nostrils and deleterious to health, all of which can and should be avoided.

If a family of four persons can keep an acre in a productive state, it follows that a family of eight souls could fertilize two acres with the same facility.

Scattered over the hills and through the valleys of Massachusetts there are hundreds of families, each containing eight or more persons, neither of which families save dressing enough in the manner indicated, to fertilize a small garden patch, never dreaming by day or night of improvidence, waste or stench. Thus, it should *not* be. Much of our soil is fast losing its productiveness through the "skinning" process; soil, too, that would now be yielding abundant harvests but for the shabby treatment bestowed upon it.

Large tracts of land, and smaller, are already run so low that we know of no conceivable way to renovate them, other than give them over to the growth of forest trees, which is a slow but rather sure process of renovation.

Massachusetts farmers, New England farmers should awake to this subject much more generally than they do, and see to it that not only the night soil but everything which can be made to nourish growing plants, is saved and in a manner that the vitalizing air which we must all inhale is not unnecessarily contaminated with hurtful effluvia.

The half civilized Chinese are at least a century in advance of us Yankees in some practices pertaining to agriculture. Careful are they to collect and save every material which will fertilize the land, even to the hair and shavings from the barber's shops. Is it a wonder that the whole surface resembles one vast garden? Or that where the people are so thoughtful about gathering all materials which could possibly taint the air or enrich the soil in which it is buried with care the appellation of "celestials" should be applied to them? The difference between the Yankees and celestials in this respect may be accounted for, in the fact that the former have had a large amount of virgin soil to resort to, while the latter are comparatively circumscribed as to territory, and are obliged to husband all their resources in order to support the people of the empire. With flour at eighteen dollars per barrel, eggs at fifty cents per dozen, butter at fifty cents per pound, sirloin steaks at forty cents, board at the house of a publican (common at that,) three dollars and fifty cents per day, would seem to indicate that the time has arrived when Yankees may as well husband their resources, especially those which will pay in a sanitary

point of view, besides rendering the products of the soil more plentiful and cheap.

If, in this writing, we have introduced subjects not strictly relevant, our apology must be that in our earnestness and zeal, whenever the matter of enriching the soil is discussed in our presence, rises almost to enthusiasm; aye, quite up to that point, when we are permitted to participate in the discussion. We cannot now close without making one earnest appeal to our city friends to be more provident and careful to save what is named at the head of this writing, and in a manner that it may be conveyed to the soil without loss to him who performs the (in some respects,) disagreeable labor, or cease to complain of high prices of farm products.

We firmly believe in a law of compensation; that God has wisely ordered that the ground on which we tread shall produce an abundance for the use of man and beast so long as an appropriate return is made therefor; that this return is to be made in just such materials as is not healthful or agreeable remaining above the surface of the earth. Decaying vegetables and plants of almost every description can be used for plant-food. The excrements, both solid and liquid, of all animals are at present our great dependence.

Dead animals, not to be used for food, should always, if practicable, become an ingredient in the compost heap, and well covered and encircled all round with earthy substances. Decomposed flesh is the most powerful of all fertilizers, and next that which is available to us in quantities which renders it of much account, in point of concentrated fertility, is night soil. We therefore urge upon all, whenever and wherever practicable and feasible, to let as little of the article be lost, and save as much as possible under existing circumstances.

Cheap and wholesome food is by the middling and poorer classes always received gratefully, and it is those classes which in the main produce the wealth of the nation, drawing it directly or indirectly from mother earth. Let us therefore keep up the reciprocity, returning to the mother all which she has a right to claim in order that she may yield an abundance for the sustenance of her children.

ASA CLEMENT,
For the Committee.

The Essay, having been read, discussed and laid over, Mr. Bull was appointed a Committee on Credentials of new members, when the Board adjourned.

SIXTH DAY.

The Board met at 10 o'clock, A. M., Dr. LORING in the chair.

Present, Messrs. Baker, Bassett, Birnie, Boise, Brown, Bull, Clark, Clement, Cole, Durfee, Fearing, Hyde, Hubbard, Johnson, King, Knowlton, Loring, Moore, Morton, Pierce, Porter, Saltonstall, Sanderson, Slade, Thatcher, Thompson, T. W. Ward, H. S. Ward, Watkins and Wilder.

Mr. Bull, from the Committee on Credentials, reported as follows :—

The Committee on Credentials have attended to the duty assigned them, and respectfully report the following as duly elected members of this Board :—

LEVERETT SALTONSTALL, by the Massachusetts Society for Promoting Agriculture.

ASA CLEMENT, by the Middlesex North.

NEWTON S. HUBBARD, by the Worcester South.

JOHN A. MORTON, by the Hampshire.

IMLA K. BROWN, by the Franklin.

C. C. BASSETT, by the Worcester North-West.

E. W. BOISE, by the Union.

ALBERT FEARING, by the Hingham.

GEORGE M. BAKER, by the Marshfield.

GEORGE A. KING, by the Barnstable.

JOHN PIERCE, by the Martha's Vineyard.

MARSHALL P. WILDER, appointed by the Executive.

(Signed,)

E. W. BULL, *Committee.*

The Report was accepted.

A Committee, consisting of Messrs. Bull, Hyde and Moore, to which was referred the mode of ascertaining the yield of crops by weighing and measuring, submitted the following amendment to the printed blank to be used by each society :—

“ The committee to whom is intrusted the award of premiums on field crops, may award the premiums according to their judg-

ment; but, for the purpose of furnishing accurate statistics for the benefit of agriculture, shall select certain of the crops, and require the owners thereof to measure the land and weigh the crops accurately, and give all possible information thereon over their signatures, and return the same to the secretary of the society, to be published in the annual transactions."

This amendment was adopted.

A Committee of three, consisting of Messrs. King, Fearing and Sanderson, to fix and determine the time of holding the Fairs of Societies, reported as follows:—

The Union Society, at Blandford, shall begin its exhibition on the Wednesday after second Thursday of September.

The Hingham Society on the last Tuesday of September.

The Marshfield on the first Thursday of October.

The Worcester North-West on the third Tuesday of September.

The other societies on the dates hitherto assigned by the Board.

GEORGE A. KING, *Chairman*.

The Essay on Manure and its Application was taken from the table, discussed and adopted.

The Essays on Hedges and Farm Fences, on Night Soil, on Fall and Spring Ploughing, on Fruit Culture, on Specialties in Farming, and on the Hay Crop, were severally read a second time and adopted.

The Report of Mr. Cleaveland, as delegate to the Hoosac Valley Society, was presented and accepted.

Mr. Johnson presented the following Essay, on

IMPROVEMENT OF STOCK.

The subject of farm stock is one of the highest importance to the farmers of New England.

To secure that degree of improvement in the cattle of this section so desirable to our highest interest, and to approach that state of perfection which characterizes the stock of England, Scotland and Holland, this subject must more engage the attention of our farmers, and the principles of close and special breeding be studied with greater care, and carried with more precision and persistence into practice.

I am aware that many, and perhaps most of our farmers, do not regard similarity of color, style and general appearance of

their herds, as worthy of that consideration which the English breeder deems a matter of great importance. But visit a herd of recently imported Jerseys, and observe that striking similarity of color, with those general characteristics which distinguish this breed in its purity, and we cannot withhold our admiration nor pass by this peculiar attraction as one not worth preserving—but which, if lost through two generations by inattention to those principles in breeding by which they may be retained, cannot be regained but by a new importation.

This loss, perhaps, may not particularly detract from the dairy qualities of the animals—but who would not prefer to pay a higher price for those selected from a herd where this similarity, characterizing any desirable breed, is most perfect?

How may these distinguishing points in similarity of color, general appearance and character be preserved? This may be secured, in my opinion, with great certainty, by sedulously keeping our herd composed only of animals of the same breed, entirely separate and distinct from the society and influences, and, as far removed as possible from the neighborhood and view of other breeds of cattle; thus endeavoring to close every avenue whereby any species of contamination may creep into and disturb its peculiarity, purity and that uniformity so highly pleasing to the eye.

Have we not observed that, when cattle of different breeds, however pure and beautiful in their distinctive external traits, occupy adjoining pastures, or the same barnyards, or are tied in the same stable-range, although copulation between the different breeds is entirely prevented, still, that under these circumstances, and by these influences, the offspring of either breed, in many instances, do not very closely resemble the parents in point of feature and mark, but partake of those which belong to, and distinguish their companions?

With this disregard to the influence of society upon the character of our herds, we cannot reasonably hope to retain that similarity among them which distinguishes those of England and Scotland where each breed is kept separate and distinct from other cattle.

In the selection of a breed of cattle we should first consider the adaptation of our climate and soil to any particular breed, together with our market facilities.

If we decide to make beef we would not select from the Jersey as favorable to our object, but rather adopt the Short-horn, Devon or Hereford; our selection from either of these varieties being influenced by our ability to feed large or small cattle most profitably.

If milk in large measure is desirable the Devon will be passed by, and our attention arrested by the Ayrshire, a variety which has been bred with regard to this specialty during the last seventy-five years, and which doubtless promises a larger return for the cost of keeping than has hitherto been obtained from any other. But if circumstances indicate that butter may prove more remunerative than either milk or beef, no one would hesitate in making a choice, since I think it is acknowledged that the Jersey, for quality of butter, and for peculiar richness of milk desirable for family use, stands as yet unrivalled.

Our choice of breed having been decided, we should be governed, in the selection of the animals to compose our herds, for whatever specialty designed, by certain rules. First, we should look for those possessing similarity of color, style and general appearance; whose skins are thin, soft, silky and elastic, and whose eyes are large, mild and bright.

Those intended for milk should carry the unmistakable external appearance, in every point of form and development, of being good milkers; and each should be selected from a line of ancestors, through many generations back, that have been *bred* and *fed* with a view to this specialty, and to develop this quality in its highest degree of perfection.

Indeed, I believe the special character and quality of all breeds of stock, in large measure, depends upon the food they receive, together with their general management during the period of breeding, and continually through a succession of many generations.

Breeders for the dairy should be fed with regard to this specialty, and that their offspring, even during the period of gestation, may be brought under all the influences tending toward this result.

Calves should nurse until the udders of their mothers are all right; and then, on weaning, should receive milk and oatmeal gruel until dry meal or some oats, with water for drink, may be allowed.

On dispensing with milk, still continue oats in some form, allowing rowen, fine clover hay and some roots for a time; then, on being turned into an inclosure of sweet grass, so near the barn that shelter, during night and storms may be easily afforded, dispense with hay and rowen, but continue feeding with small quantities of oats or roots, and a trifle of Indian meal through the summer and autumn.

During the first winter they should receive careful attention; being provided with warm, cleanly and well ventilated stables, and fed on clover hay and rowen with oats in some form daily, together with a supply of some kind of roots; adhering strictly to the principle of regularity in times of feeding.

Through the succeeding season care should be taken to provide for them pastures yielding plenty of nutritious grasses to assure their rapid growth and free development.

Similar care is requisite during the second winter, and a continuance of the same kinds of food should be allowed, with such increase in quantity as advancement in size and circumstances demand.

Thus, I would feed both male and female from the first day of birth, with a view to secure a full development of milk-producing qualities. In this manner a large growth, in most cases, will be attained at two years of age.

It is preferable that heifers, having attained sufficient growth by this mode of feeding and management, should come into the dairy at two years of age. But in this case it is advisable to suffer them to remain farrow during the succeeding year for the purpose of affording greater opportunity for development, and the acquirement of a higher state of maturity than would otherwise be attained. But I would avoid raising the calves of two-year-olds, as I would those from old and exhausted cows; believing the practice in either case, if continued, will produce specimens of stock wanting in the essential of vigor and strength of constitution, and must be attended by fatal deterioration and consequent disappointment in the character of our stock; differing materially from that raised from parents having attained the most perfect period of life.

Males do not acquire the highest degree of vigor, strength of constitution, and power to transmit the most perfect qualities of their blood to offspring, until in most instances, they are four or

five years of age ; and hence should be held in reserve for purposes of breeding until this age and peculiar condition of fitness have been acquired.

At this period of maturity we may bring them into use with great assurance of realizing our highest hopes and most reasonable expectations in the gift of purity, beauty of type, precision of color, excellence of quality, and that high future promise to their progeny, so gratifying to every tasteful breeder of stock, and every seeker for the highest certainty of success and improvement.

The physical system and constitution of very young males is undeveloped ; and in their use we constantly breed weakness, and are sure of reducing the standard of strength and vitality of our herds.

We should never be shy of keeping a good bull because no immediate income is derivable from him. He is surely the foundation, the corner-stone and source of all improvement in our neat stock, and no one animal pays so well ultimately for keeping, or occupies a station on the farm so important or responsible.

No stock-bull should be allowed to serve more than fifty cows during a season.

With due regard to care in the management and feeding of stock, and by close attention to the principles of breeding, it will not be many years before the farmers of this country may secure breeds of cattle which will well compare, in points of purity and excellence of quality, with those of Jersey or Ayrshire ; and in some respects must prove superior.

The same *care* is requisite in selection of stock to fulfil the intention of butter or beef ; and each herd requires to be fed with a view to secure the particular specialty desired.

All farmers may not wish to raise and keep blood stock ; but there can be no doubt that the dairy, either for the product of milk or butter, is by far the most profitable department for the farmers in the eastern part of Massachusetts to pursue, and therefore, deserving their especial consideration.

That we have already achieved great improvement in farm stock, no doubt can be expressed when the facts set forth in the statistics are examined.

In 1855, the valuation of the cows and heifers in the State was, \$4,892,291 ; and in 1865, it was \$6,537,634 ; showing an increase in ten years of \$1,645,343.

In 1855, the value of the product of dairy cows, in milk, butter and cheese, was \$2,898,696 ; and in 1865, it was \$3,091,462 ; showing an increase in the products of the dairy to the amount of \$192,766. It is probable that the increase in the products of beef and veal have been equal to that of the dairy. This sum, added to that in valuation and income, above recited, amounts to \$2,030,871.

In view of this achievement within ten years, embracing that unhappy period of time when the war necessarily engaged much of our attention, bearing heavily upon our energy and means, and the advancement of our farming interests, what may we not anticipate will be the results of our efforts in this direction during the next ten years, which we sincerely hope may be crowned by the blessings of smiling peace.

Some farmers, as we have observed, are not disposed to raise pure blood stock. But, surely, all must desire to improve the herds we already have. Indeed, I incline to the belief that, wherever much improvement upon our original stock is noticed, close inquiry will disclose the fact that a *blood bull* has been entertained in those districts to the exclusion of an inferior "*scrub* !" The latter should be more generally discarded by our intelligent farmers.

We know that even a *veal calf* from a blood bull commands a higher price in the market than one from an ordinary specimen, to say nothing by comparison in regard to the marked superiority of those intended for the dairy who carry a large strain at least of pure blood.

The maxim in breeding, that "Like produces like," being obviously true, it is, therefore, highly important that we introduce blood bulls into the society of our herds, whereby we may secure a large infusion of the best blood. We know that grade cows are vastly superior for the dairy to those bearing no relation to purity of blood.

By bringing our best cows thus under these influences of improvement, feeding at the same time with especial regard to this object, we shall obtain results decidedly favorable to our advancement, and highly satisfactory.

But, suppose it may cost *more* to raise stock of this improved character, to furnish our farms with the requisite number, than to purchase promiscuous specimens in the market, as some farmers argue, the superior quality of those raised under our own management, will more than balance the extra expense of raising, if any attends the practice.

The motto of every intelligent farmer should be that he will raise his own stock ; and, as far as practicable, all those products of the soil required for the maintenance, and conducive to the highest state of development and profit of his herd.

Respectfully submitted,

JOHN JOHNSON, Jr.

FRAMINGHAM, February 1st, 1868.

This Essay was accepted.

Voted, To assign the delegates to attend the exhibitions of the year as follows : —

Essex, at Newburyport, Sept. 29 and 30,	I. K. BROWN.
MIDDLESEX, at Concord, October 1, 2 and 3,	NATHAN DUFFEE.
MIDDLESEX NORTH, at Lowell, Sept. 23 and 24,	GEORGE B. LORING.
MIDDLESEX SOUTH, at Framingham, Sept. 22 and 23,	JAMES THOMPSON.
WORCESTER, at Worcester, Sept. 17 and 18,	ALBERT FEARING.
WORCESTER WEST, at Barre, Sept. 24 and 25,	M. F. WATKINS.
WORCESTER NORTH, at Fitchburg, Sept. 29 and 30,	C. C. BASSETT.
WORCESTER NORTH-WEST, at Athol, Sept. 15,	LEVERETT SALTONSTALL.
WORCESTER SOUTH, at Sturbridge, Oct. 1,	T. D. THATCHER.
WORCESTER SOUTH-EAST, at Milford, Sept. 29 and 30,	J. PIERCE.
HAMPSHIRE, FRANKLIN and HAMPDEN, at Northampton, Oct. 1 and 2,	C. G. DAVIS.
HAMPSHIRE, at Amherst, Sept. 29 and 30,	E. W. BOISE.
HIGHLAND, at Middlefield, Sept. 10 and 11,	A. P. SLADE.
HAMPDEN, at Springfield, Oct. 6 and 7,	WILLIAM KNOWLTON.
HAMPDEN EAST, at Palmer, Oct. 13 and 14,	GEORGE M. BAKER.
UNION, at Blandford, Sept. 16 and 17,	J. A. MORTON.
FRANKLIN, at Greenfield, Sept. 24 and 25,	GEORGE A. KING.
BERKSHIRE, at Pittsfield, Oct. 6, 7 and 8,	THOMAS BILLINGS.
HOUSATONIC, at Great Barrington, Sept. 30 and Oct. 1 and 2,	E. W. BULL.
HOOSAC VALLEY, at North Adams, Sept. 22, 23 and 24,	H. S. WARD.
NORFOLK, at Dedham, Sept. 17 and 18,	N. S. HUBBARD.
MARSHFIELD, at Marshfield, Oct. 1 and 2,	ASA CLEMENT.
BRISTOL, at Taunton, Oct. 6, 7 and 8,	C. SANDERSON.
BRISTOL CENTRAL, at Myrick's, Sept. 17 and 18,	WILLIAM BIRNIE.
PLYMOUTH, at Bridgewater, Sept. 24, 25 and 26,	H. S. PORTER.
HINGHAM, at Hingham, Sept. 29 and 30,	T. W. WARD.
BARNSTABLE, at Barnstable, Oct. 13 and 14,	ALEXANDER HYDE.
NANTUCKET, at Nantucket, Sept. 30 and Oct. 1,	J. JOHNSON, Jr.
MARTHA'S VINEYARD, at West Tisbury, Oct. 20 and 21,	J. L. COLE.

The Examining Committee of the Agricultural College was constituted by the appointment of Messrs. Agassiz, King and Moore.

The Essay on Drainage was then read by its title, and adopted.

The Committee on Meetings was constituted by the appointment of Messrs. Clark, Hubbard, Moore, Birnie, and the Secretary.

The Committee on Printing was constituted by the appointment of Messrs. Porter, Knowlton, Moore, Loring and the Secretary.

Adjourned.

SEVENTH DAY.

The Board met at 10 o'clock, A. M., Mr. THOMPSON, of Nantucket, in the chair.

Mr. Johnson, from the Committee appointed to consider and report a list of subjects for investigation, and to assign such subjects to appropriate committees, submitted the following:—

Abortion in Cows.—Messrs. Brown, Billings and Thomas W. Ward.

Theory and Practice.—Messrs. Saltonstall, Bassett and Boise.

Amending Soils by Mechanical Means.—Messrs. Sanderson, Morton and Baker.

Cultivation of Cereals.—Messrs. Knowlton, Clark and Pierce.

Climate as affected by Soil and Location.—Messrs. Bull, Hyde and Thompson.

Preparation of the Soil for Seed.—Messrs. Watkins, Davis and Durfee.

The Best Method of Feeding Dairy Stock.—Messrs. Thompson, King and Hyde.

The Time of Cutting and Mode of Curing Hay.—Messrs. Johnson, Fearing and Moore.

Road Building and Repairing.—Messrs. King, Ward of Monson, and Cole.

The Small Fruits.—Messrs. Slade, Thatcher and Birnie.

Sand for Bedding and Compost.—Messrs. Birnie, Knowlton and Billings.

Domestic and Factory Dairies.—Messrs. Thatcher, Hubbard and Porter.

Improvement in the Management of our Agricultural Societies.—Messrs. Loring, Johnson and Brown.

The Breeding and Training of Horses.—Messrs. Porter, Ward of Shrewsbury and Sanderson.

The Potato Crip.—Messrs. Hyde, Slade and Watkins.

Waste of Manures.—Messrs. H. S. Ward, Cole and Davis.

Farming as an Occupation—its Advantages as compared with other business.—Messrs. Hubbard, Brown and Bull.

Commercial Manures.—Messrs. Clement, Morton and Boise.

Relation of Manufactures to Agriculture.—Messrs. Durfee, Fearing and Baker.

Fruit Culture and its Preservation.—Messrs. Wilder, Clement and Pierce.

Draining, its Effects upon the Soil and Crops, and the Cost of the Different Methods.—Messrs. Moore, Loring and Pierce.

Nature's Methods of Distributing Plants.—Messrs. Clark and Wilder.

This Report was accepted and adopted.

Voted, To appoint a committee of three to examine and report upon the construction of a barn.

This Committee was constituted by the appointment of Messrs. Hyde, Loring and Moore.

After referring all unfinished business to the Committee on Printing, the Board adjourned.

THE FAIRS.

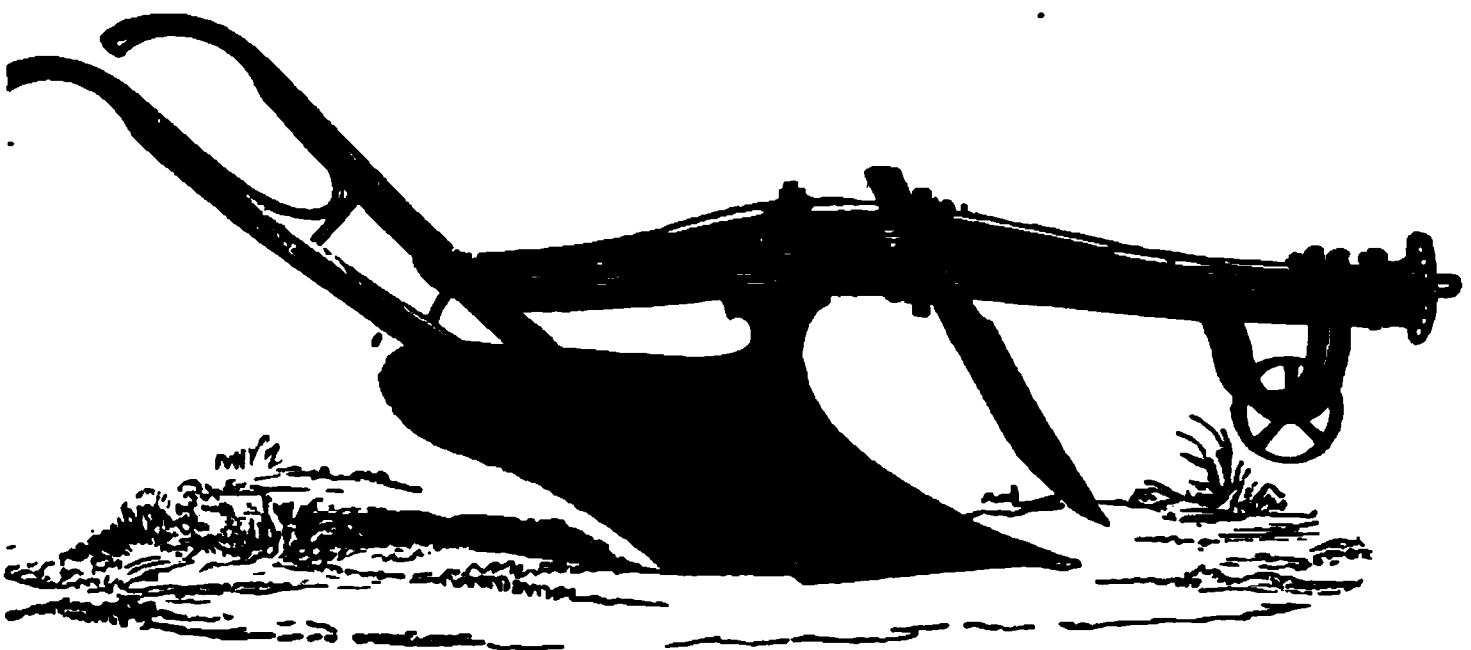
The exhibitions of the various agricultural societies have been numerously attended during the year, and their influence has been as widely felt as in any former period of their history. These fairs offer the most ample facilities for bringing to the knowledge of the people the vast improvements which are taking place in all the departments of farm economy.

In looking over the returns of the county societies, it is gratifying to find that the department of agricultural mechanics has by no means fallen behind any other in extent or interest. Novelty is not, to be sure, always improvements; but every improvement implies a novelty, whether it be in a new principle

applied, or in an old, well-established principle applied in a new form, or to effect a new and hitherto unattained object. The fact that our ingenious inventors and our skilful mechanics appreciate the advantages which the exhibition affords of bringing their implements to the knowledge of the public, is fully shown by the large number of entries in this class on the books of the societies.

In implements for stirring the soil, the plough still maintains its position as the fundamental implement of husbandry. The iron has, in many instances, been substituted for the wooden beam, and it is probable that the time will come when the objections to it will be removed from the minds of our farmers. It is somewhat heavier, to be sure, but that scarcely increases the draught, while the strength and durability attained must be regarded as an advantage. Still it is evident that, for the present, we shall adhere to the wooden frame as being the least costly, more yielding and flexible, and somewhat lighter to handle.

At the discussion at Concord, some members of the Board spoke of the practical utility of the Doe plough, which has reached a high reputation in some sections of the State.



DOE PLOUGH.

This favorite plough, if not the best as a stubble or as a sod plough, has a wider range of adaptation than many others, and has the credit of doing admirable work in a great variety of soils and circumstances. The farmer cannot always afford to own a plough especially and perhaps best adapted to stubble and another particularly suited to sod ploughing. He wants one that will do good work wherever it is placed. This plough took

the first premium at the New England, and at some of our county fairs. It is manufactured by Whittemore, Belcher & Co., at Chicopee Falls, and sold at their warehouse, 34 Merchants' Row, Boston.

A very neat and efficient seed-sower was exhibited and took the premium at the Essex Society. It is known as the Improved Danvers Seed-Sower, manufactured by G. E. Herrick, of Lynnfield Centre, and sold by Messrs. Parker, Gannett & Osgood, at 49 North Market Street, Boston.



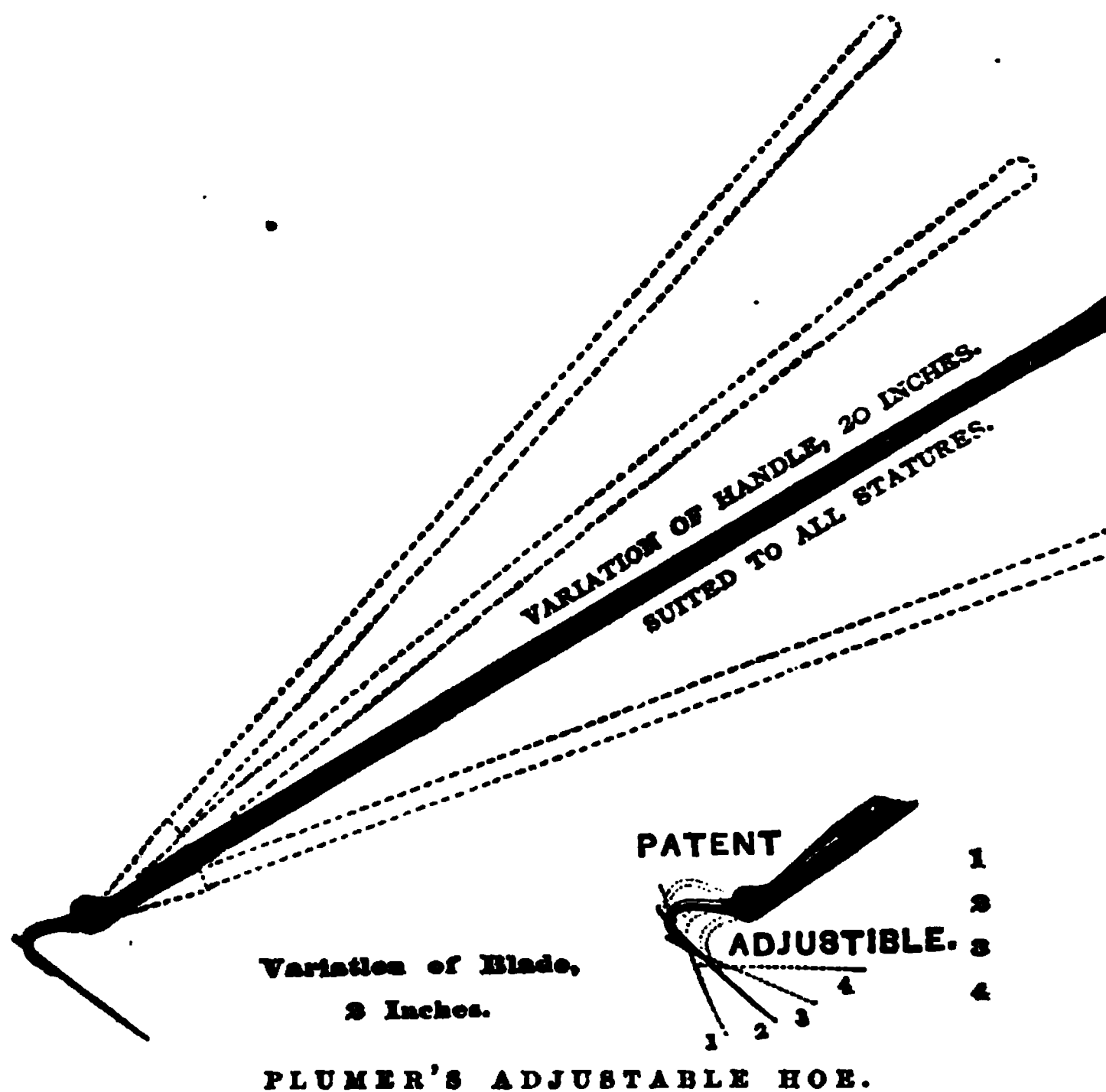
IMPROVED DANVERS SEED-SOWER AND HOE.

It sows onions, turnips and other similar seeds with great uniformity, and mangolds and other varieties of beets, and parsnips, carrots, &c., as well as any machine with which I am practically acquainted. It is to be recommended for its simplicity and cheapness, a feature of no little importance, as it insures its use in many hands where a more expensive machine would not find its way.

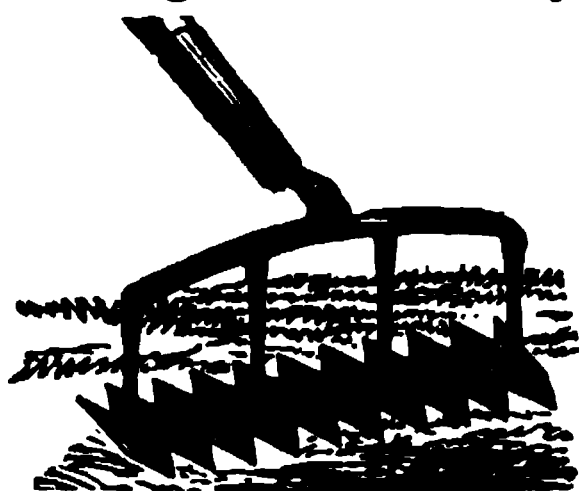
Our hoes have generally been thought to be all that could be desired as respects lightness, beauty of finish and durability. As compared with a similar class of implements that I have ever seen in any other country, they are unsurpassed. But it is well known that a hoe that is well adapted to a man or to a tall person is not always so conveniently worked by a boy. An attempt has been made to remedy this difficulty by attaching an adjustable shank by which the hoe can be "set" or adapted to different statures.

By this simple arrangement the hoe can be made to hang to suit the operator, and held firmly by a nut. In other respects it is like the common hoe, light and substantial. It appears to be a convenient invention, and has received the sanction

of a premium by the New York State and the New England Agricultural Societies. It is patented by Dr. J. C. Plumer, of Boston.



Another simple but effective and valuable implement is a weeding hoe invented by George P. Allen, of Woodbury, Conn.



ALLEN'S WEEDER.

It is a scuffle hoe to be worked back and forth between the rows of vegetables, or in garden or other walks, running just beneath the surface. The zigzag or serrated edges of the blade greatly increase the cutting surface, and make it easy of operation and useful in destroying weeds.

No branch of agricultural mechanics, if we may judge from the implements exhibited at the fairs, has made greater progress in improvement than that of machines designed for the hay harvest, the cutting and curing of grass. Power in this direction has

been vastly multiplied by machinery within the brief space of ten or fifteen years. These improvements, moreover, have been steadily progressive. We now have mowers of easy draught and that do the work well—most of them, in fact, better than it could be done by the hand-scythe.

The past year has recorded the triumph of American mechanics at the Exposition at Paris. It was an American machine that took the lead of all others on the field, and won for its ingenious inventor, Walter A. Wood, of Hoosick Falls, N. Y., not only the grand gold medal for perfection of work and another for superiority of mechanical construction, but also the decoration of the Imperial Cross of the Legion of Honor. This must be regarded as a national triumph in which every American must feel a just and natural pride. [See Frontispiece to the Abstract of Returns.]

This new jointed-bar mower runs upon two driving-wheels, each of which has an internal gear which connects with ratchet-gear wheels, making each an independent driving-wheel. These wheels are so placed as to run in the tracks made for them by the track-clearer so as to avoid running over the grass that has been cut. The spring seat is so placed that the driver's weight balances the weight of the tongue, leaving no pressure upon the necks of the team. A new lever arrangement is attached to raise the finger-bar in passing obstructions and to hold it at any height, raising both ends of the bar at the same time. The arrangement for throwing in and out of gear is also very simple and convenient. The guard-fingers are made of malleable iron faced with steel plates riveted securely and attached to the bar by bolts, by means of which they can be readily removed or replaced. The frame is of wood, this having been found by experience to be altogether the best material. The bar is sufficiently strong to stop the team in case of striking any obstacle, and still elastic enough to fly back to its position when the strain is removed.

This machine took the first premium of the Essex, the Berkshire and other fairs. Fully a hundred thousand have been built and sold, and it is estimated that at least fifty thousand were used in the harvest of last year. It is made at Hoosick Falls, N. Y. The Boston agents are Messrs. Whittemore, Belcher & Co., 34 Merchants' Row.

Many improvements, also, are noticeable in the celebrated "Buckeye" mower, a machine well known to the farmers of this State. The draught has become easier, while the strength and efficiency are retained. It was built the last year from entirely new patterns, adopting a new style of inside shoe, and doing away with the spring keys for fastening connection with the scythe, new ratchet lever for raising the finger-bar, new gearing throughout, narrower sections, increase of speed, and a new shipper for throwing out of gear. The result is a smoother cut, a lighter draught, and greater ease in raising the finger-bar. The liability of breaking the finger-rods is also lessened, and it is easier to take out and replace any parts when necessary. This machine took the prize at the great trial of mowers and reapers at Auburn, N. Y., in 1866, being awarded the gold medal as the best mower at the trial.

THE BUCKEYE MOWER.

The knives of the Buckeye are tempered by a process which secures uniformity, all being alike, a result which cannot be secured by the ordinary process of tempering. The advantage of this cannot be overestimated.

The Buckeye is manufactured by the Buckeye Mowing Machine Company at West Fitchburg, under the practical and skilful hand of A. B. Barnard, Esq., the works themselves being a marvel of ingenuity. The Boston agents are Parker, Gannett & Osgood.

The hay tedder naturally follows the mower. This is a comparatively new machine in our hay fields, but the advantages of its introduction have become so apparent that it has rapidly gained favor, and the number of machines sold has been large, and is increasing every year.

The new system of hay-making which was inaugurated by the invention and use of the horse-rake and the mower, was not complete without some other machine to enable the farmer to cure the large amount of grass which the mowing-machine could readily cut. There was still more or less dependence upon hired men, notwithstanding the immense saving of labor in cutting and raking. The hay tedder comes in to meet this difficulty, and it has relieved many a household of the care and labor and anxiety which always came with this busy season of the year. Those who have used a tedder, so as to be able to appreciate the immense saving of labor which it secures, and the many incidental advantages which this saving has brought with it, are unanimous in the opinion that it is of nearly equal importance with the rake and the mower; and I have heard farmers declare that if they must dispense with either, it would be with the mower rather than the tedder.

The first machine of this kind used in this State, so far as I am aware, was imported from England. But, like most English machines, it was of heavy draught and unnecessarily cumbersome. It was used sufficiently, however, to show the importance of such an implement. Spreading swaths and turning hay, though light, is slow work; but it is precisely this kind of work where animal power comes in to multiply the power of hand labor many times. The tedder, for instance, will do the work of from twelve to fifteen men in the same time, so that the necessity of extra help is dispensed with, and the hay is cured with greater rapidity and greater certainty, often, by this means, avoiding exposure to showers or wet weather and the injury to result from it.

THE AMERICAN HAY TEDDER.

In fair weather, for instance, a boy and a horse can cure all the grass that can be mown by the machine in the morning, so that it will ordinarily be fit to go into the barn in the afternoon of the same day. Grass kept lightened up to the sun and air dries quickly. The tedder may be put into the field as soon as the mower has left it, and kept in operation till the whole crop is properly cured, giving ample time to rake and load. Indeed, when the advantages of this implement are better known, it will probably come into very general use as an indispensable labor-saving machine.

The American tedder is mounted on two driving-wheels. It is rigged with sixteen spring forks, attached in an ingenious manner to a light reel. The forks revolve very rapidly even while the horse is going at a slow walk, and it runs without noise. It is so simple that a boy can operate it, nothing being required but to sit and drive with both hands free. The draught is easy. This machine is manufactured by the Ames Plow Company, and is for sale at their warehouse at Quincy Hall, Boston.

The horse-rake was one of the first inventions designed to relieve the severe labor of hay-making, and it must be regarded as one of the most important, second only to the mowing-machine. Many patents have appeared, each one possessing, no doubt, some advantages peculiar to itself. Two or three new claimants for popular favor appeared at the fairs last year, and they are worthy of mention. One of these is the Whittemore Self-Locking Rake.

SELF-LOCKING RAKE

This is a simple and effective machine that may be worked either by the foot or the hand. A lock-lever is arranged to hold the teeth to the ground in the raking of heavy grass, where many machines are inclined to rise and scatter the hay. It has an easy spring seat secured to the axle, so that the weight of the driver does not press upon the horse. By means of the self-locking arrangement it can be set with the teeth a little above the surface of the ground, when it becomes a very efficient gleaner in grain stubbles. The teeth act independently, and it is furnished with cleaners which secure the instant unloading of the rake when lifted. It is manufactured by Messrs. Whittemore, Belcher & Co., at Chicopee Falls, and is for sale at their warehouse, 34 Merchants' Row, Boston.

No farmer can afford to be without a good horse-rake. It saves time and labor at the busiest season of the year, and often when without its use it would be impossible to avoid injury from exposure to bad weather. It is almost as essential on the farm as the plough itself.

The Bay State Rake also appeared at the exhibitions last year in its perfected form. This rake had been known for a year or two previously as the Barre rake, having been invented by S. R. Nye of that town; but from a slight defect in mechanical construction it had not fully justified the expectations which were at first entertained of it. This objection having been entirely overcome, it entered the hay-fields last year and won the most enthusiastic encomiums from those who are most capable of judging of its practical value and working capacity.

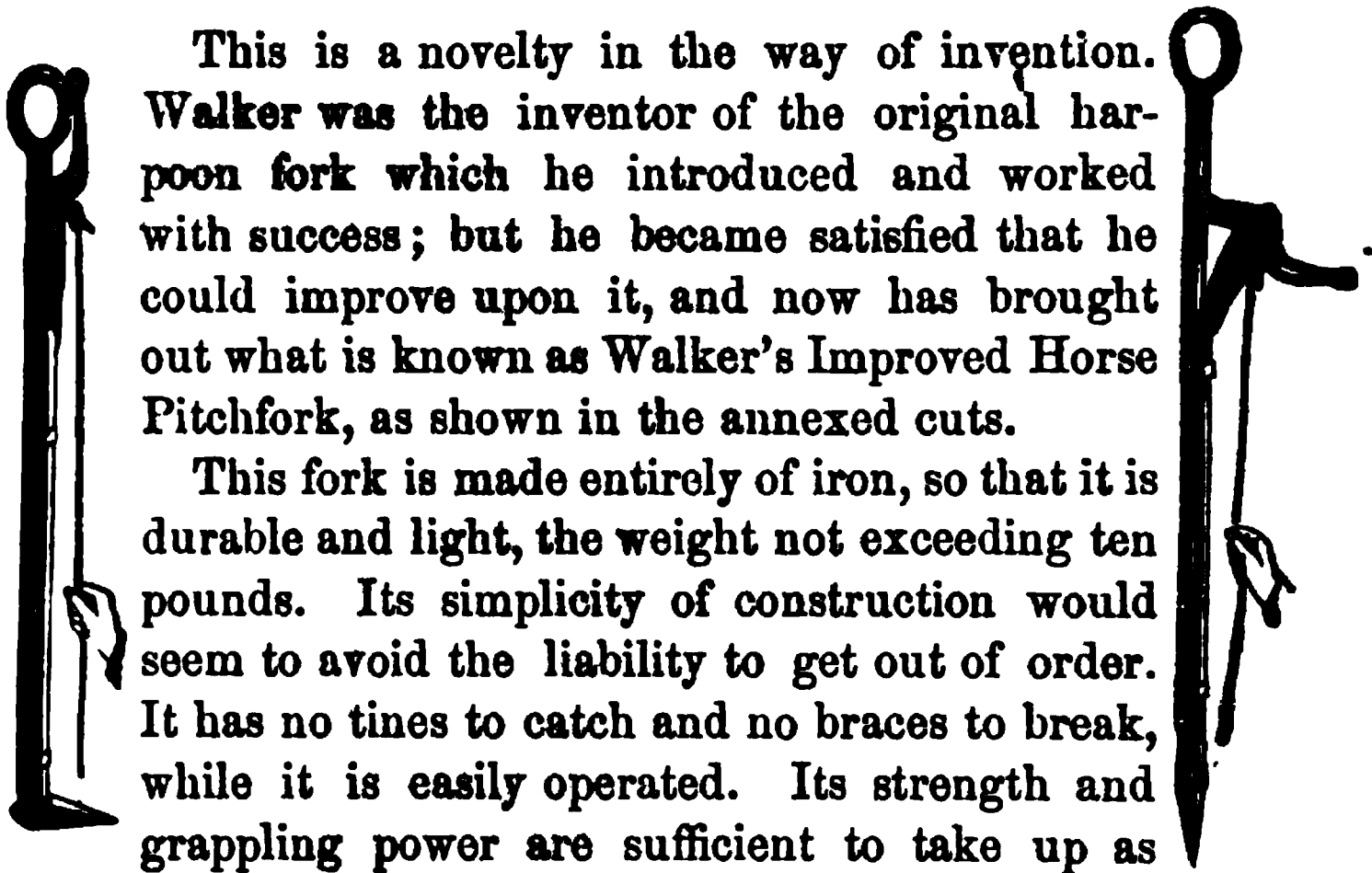
This rake is mounted on high wheels. It is a steel tooth, each tooth being hinged to the axle and pressed down by spiral springs. Each tooth operates independently of the others in passing an obstruction, while the draught is light and the material and workmanship are unsurpassed. The ease with which it is worked is something wonderful. The driver has only to touch a simple lever with his foot, with a slight pressure, which any boy can apply, when the rake is lifted by the horse, and by means of cleaning rods frees itself at once of its load. It is set so high that a large windrow can be gathered, and if desired the windrow can be cocked ready for loading. This rake is manufactured by the Buckeye Mowing Machine Company, at West Fitchburg.

THE BAY STATE RAIL.

Improvements have not been confined to the mowing, spreading and raking of hay. They have extended to the means of loading and unloading, and have effected an immense saving of physical strength and of time. Of the patents for loading hay I have not had an opportunity of seeing those which have met with the greatest success, and am not able to speak from observation.

Of the horse pitchforks for unloading and mowing away hay, several have been introduced into this State, and have been worked with more or less satisfaction. They have also been exhibited at the fairs, where they have been examined by large numbers of observing, practical farmers. One of the cheapest, most compact and simplest contrivances that I have seen is Walker's patent.

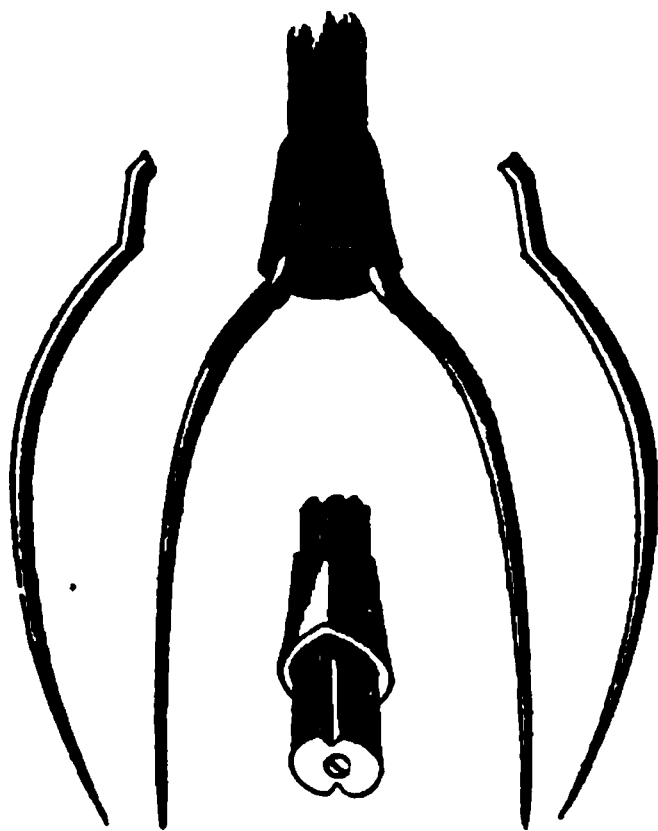
This is a novelty in the way of invention. Walker was the inventor of the original harpoon fork which he introduced and worked with success; but he became satisfied that he could improve upon it, and now has brought out what is known as Walker's Improved Horse Pitchfork, as shown in the annexed cuts.



This fork is made entirely of iron, so that it is durable and light, the weight not exceeding ten pounds. Its simplicity of construction would seem to avoid the liability to get out of order. It has no tines to catch and no braces to break, while it is easily operated. Its strength and grappling power are sufficient to take up as much hay as the horse can raise over the beams. It may be worked rapidly. When thrust into the hay it is a straight, spear-like implement, till, on pulling a spring or bolt in the handle, a prong or hook is thrust out to grapple the hay, and thus lift large quantities from the load. This fork is manufactured by Messrs. Wheeler, Melick & Co., of Albany, N. Y.

A new invention has been applied to the hand-fork, by which the tines, in case of breakage, are easily removed and replaced by others. It is known as the Montgomery fork, manufactured by the Montgomery Fork Company, at 254 Pearl Street, New York City. The mode of securing the tines will be readily seen by the annexed cut. A ferrule is held by a screw clasp

tightly around the end in which the tines are inserted. On loosening the screw and knocking back the ferrule the tines can



be put in without difficulty, when the ferrule is driven back to its place and screwed fast. It is well known that in attempting to repair a broken tine the other is usually spoilt, so that practically on the occurrence of an accident of this kind the whole fork is thrown aside as worthless. With this fork any number of extra tines can be had at a low cost, to be used when needed; or should the handle break, the tines can be fitted to

THE MONTGOMERY FORK. another handle in a few minutes' time, and the fork is as good as ever. The handle is not tapered at the end where the tines are inserted, so that the whole strength of the wood is left. The tines are of steel, uniformly tempered. The weight is no greater than that of the common fork. The manure forks, with both long and short handles, are especially neat and strong, and there can be no danger of the tines working loose in either hay or manure forks. This appears to be a very useful improvement.

Hay and fodder cutters have become quite indispensable in the barn and the stable. Much as the question of the economy of cutting or chopping food for stock has been discussed, few farmers would be willing to be without a strong and good machine; because, whatever may be the individual opinion as to the matter of cutting hay and some other kinds of food, there are many coarser substances, like straw, corn stover, swale hay, &c., about the cutting of which there can be no question of economy. If they would be utilized at all, it is often almost a matter of necessity to cut them in order to feed them out with the greatest economy and advantage, especially when the greater facility of handling the manure is taken into account.

One of the best hay-cutters with which I am practically familiar is known as the National. This machine is made of several sizes, to meet the wants of large and small farms. The

smaller ones are worked by hand, and the largest may be driven by horse or steam power. This machine runs easily and cuts uniformly. This is a very important feature in a hay or straw-cutter. It is not liable to clog, and it possesses other advantages which give it a decided superiority over many other machines that I have examined.

NATIONAL FODDER-CUTTER.

It is manufactured by J. D. Burdick & Co., of New Haven, Conn. Joseph Breck & Co., at 51 North Market Street, are the Boston agents.

A good root-cutter is another essential labor-saving implement. No good farmer would think of keeping a flock of sheep or a stock of cattle without a liberal supply of roots. The turnip, swede and mangold crops are almost as important, in point of economy of farm management, as the hay crop itself; and it will be found very difficult to keep up and improve the fertility of a farm without them. More than seventy-three tons of mangolds to the acre have been raised in this State, and crops of fifty to sixty tons are not uncommon. If there is any other crop which is of equal value that can be raised with as little labor, I do not know what it is, especially when it is used as a change in the spring of the year, and when it is considered that

store pigs can be kept well on raw mangolds alone from November to March. The amount of manure which the root crop is capable, under judicious management, of returning to the soil, is quite remarkable.

But every farmer who has fed fruit or vegetables of any kind to stock, understands the importance of reducing them to small pieces before feeding them to animals, except, perhaps, horses, or such as have front teeth in both jaws, by means of which they can nip and reduce their food. Cattle and sheep, in eating pumpkins, carrots, turnips, potatoes, &c., must receive them of a size which they can readily take between the double teeth, or else they are liable to choke. Besides, many an animal's teeth are poor, and it is a great exertion in such cases to break down coarse roots into small pieces.

The Excelsior Root-Cutter, exhibited at the fair of the Housatonic Agricultural Society, appears to me to be one of the best that I have examined, on account of the shape and condition in which it leaves the roots after they have passed through it; that is, in long and slender strips of the size and shape of a man's thumb. This machine cuts pumpkins, turnips and other kinds of roots of a size desired by the operator. At the last

EXCELSIOR ROOT-CUTTER.

State fair at Buffalo it cut a bushel of potatoes fine enough for sheep in twenty-six seconds. The roots are put into a box and come in contact with a hollow iron cylinder, the upper side of which is shown in the figure. Small gouge-shaped cutters are fastened to the surface of this cylinder, and these slice out the pieces of roots and pass them down into a basket below with great rapidity. It is so easily worked that a small lad can cut a bushel of roots in a minute with little exertion. If the

knives become dull they can readily be sharpened by the use of a round file.

This excellent machine is made by J. R. Robertson, at Syracuse, N. Y.

A convenient and simple bag-holder has been devised and patented by E. C. Fairchild, of Sunderland, in this State. It consists of a metallic tunnel to which is attached four hooks which hold the mouth of the bag distended in a way to be ready to receive the grain from the measure or shovel without the inconvenience of holding and filling the bag at the same time.

The tunnel is attached to the standard by means of an iron plate, on which are placed three or four lugs, one above the other, so as to hold the tunnel at the desired height. It is a compact and durable

arrangement, which must be very convenient on the farm, where there is much grain to handle. Its cheapness and simplicity will recommend it.

The above are only a few of the more recent inventions which have attracted my attention at the exhibitions of different societies. The list might be considerably extended did space permit, but it is sufficient to show that thought and skill and mechanical ingenuity are constantly at work to develop the means of lightening labor and saving time.

The wants of Western Europe, especially of Great Britain, and the resources of the New World, have opened up a vast field for enterprise and investigation in relation to the preservation and transportation of animal food. For more than a century various processes have been devised, introduced and often patented, and it may not be unimportant to state generally the principles which have been involved in the successful plans hitherto suggested.

Drying meat in the sun, or artificially, forms the groundwork of the simplest methods. The charqui or jerked beef of South America and the lumps of beef preserved by savages, constitute excellent examples. Travellers have often been amazed at the absence of putrefaction and at the tendency to natural preservation of the carcasses of animals met with on many plains in the South. Heat, with rapid currents of dry air not far from the Atlantic coast, seems to furnish the conditions of this spontaneous process which has been modified in the hope of meeting the wants of mankind in the manufacture of charqui. But from time immemorial have the people in Scotland skinned and cut up the carcasses of sheep which had died of braxy, and having squeezed much moisture out of the flesh, have smoke dried the hams, once so eagerly sought after in the London market. The fact that braxy hams were the produce of diseased animals put an end to the trade when rapid communication with the British metropolis was first established.

Salting meats came into great request with the development of the European navies. The trade in salt provisions of all kinds is only limited by supply, but it is evident to all that much of the meat-juice is wasted. Simple salting is almost impossible in hot countries, and the production of scurvy from the use of such food must lead to the introduction of other processes of preservation. By Dr. Morgan's process of injecting the salt into the blood-vessels of animals, it was hoped some of the inconvenience arising from the ordinary curing process might be overcome; but it has not realized the expectations of commercial men. Antiseptic salts, such as the hyposulphites of soda and bisulphite of lime, have been recommended to a limited extent.

Various plans have been successfully adopted for the preservation of spiced and cooked meats. The Spaniards long since

packed sausages in cases layer by layer, intercepted with fat poured on warm so as to fill up every interstice and completely surround the mass. If I mistake not, adventurous explorers in Australia have adopted a similar plan with meat which they required on distant overland journeys; but it is necessary that the meat should be cooked. The most recent and beautiful modification of this process is that of Dr. Redwood, of London. Paraffine, that simple, neutral and delicate material, capable of resisting all ordinary temperatures, is used for a coating around meat which has been cut up into parcels of a few pounds, and has been raised to a temperature of 240° Fahrenheit. The paraffine is easily melted off when the meat has to be used, and it imparts no flavor to food, which can be dressed in various ways as a palatable form of diet.

The system of filling tin cans with animal and vegetable substances, heating the whole first up to the boiling point, and then to a higher point whilst the lid is finally closed by a drop of solder poured on a pin-point outlet left for the escape of steam and to prevent the bursting of the vessels, is one of the most successful ever introduced. In order to raise the temperature of the baths into which the tins are placed to be cooked, a solution of chloride of potassium or chloride of calcium is used instead of water. This does away with much of the steam which otherwise fills the atmosphere of the manufactories. The tin cans are usually placed in testing rooms at 90°, and if they resist this temperature for three or four days, will keep for twenty or thirty years.

In Liebig's process the animal is slaughtered and dressed in the ordinary way, and when the carcase is cold the meat alone is placed in iron rollers, armed with points, whereby it is reduced to a pulp. This is thrown into water, steamed for an hour, and passed into a trough with a sieve at the bottom through which the meat-juice oozes into another vat. The fat is skimmed off. Steam-pipes serve to heat the pure gravy, and bellows are made to blow on the surface so as to evaporate for six or eight hours, when it is passed into a filtering vat and drawn off as extract of meat. This is then packed in tins for exportation. Eight small tins holding the juice of an entire ox, are valued at ninety-six shillings, and make over one thousand basins of strong soup, estimated to cost one penny per basin. This soup is probably

more stimulating than actually nutritious, as much of the material in meat which renders this a sufficient food for the support of man is left behind in obtaining Liebig's extract. It is, however, an invaluable addition to our alimentary substances.

But heat, which has even in other ways been brought to the aid of the meat-preserver, has not alone attracted general attention. The mammoth's flesh in the regions of eternal snow, and the frozen animals in the caves of the highest mountains in almost every part of the habitable globe, have suggested to man the freezing system which we use for our turkeys and prairie chickens, which is employed to preserve salmon and other fish, and affords fresh meat to passengers across the Atlantic, has induced the construction of ice-houses which can be brought to as low a temperature as 24° Fahrenheit, and suggested the establishment of refrigerator railway cars, whereby we in Boston are to be furnished with the healthy beef of the West. But frozen meat loses its best flavor, and putrefies almost instantly on exposure to air.

The use of antiseptic and other gases for the preservation of food in hermetically sealed vessels is of recent date, and hitherto has only served, and that to a very limited extent, for the preservation of fruit. Meat has been preserved, but not so successfully as to lead to the development of a trade.

Another invention of a different character has recently been brought to the attention of the people, and it promises to be of immense importance in modifying our supplies of animal food. It is that of a new process of preserving meat by the use of carbonic oxide and sulphurous acid gas. This simple and inexpensive process was devised by Professor John Gamgee, of the Albert Veterinary College, London. It is to be applied first, on a commercial scale, in this country.

It is easy to see that should it prove to be practicable, on a large scale, as there seems no reason to doubt, it will do away with the cruel system of live stock transportation over long lines of railway, which is in the highest degree objectionable for many reasons. The animals arrive at the market for sale, after five or six days of travel, during which they are closely crowded into box cars, often so that they cannot touch the fore feet to the bottom of the car for hours in succession; without a drop of

water or a mouthful of food during that time, and compelled to breathe constantly a pestiferous air.

They arrive here, of course, in a highly feverish condition. Their flesh is diseased, so much so that if there were an attempt to keep them a few weeks and restore them to a normal condition of health, a very large per cent. would die, and the balance would inevitably fall off in flesh.

By Gamgee's method of preservation, the carbonic oxide is administered very much in the manner of giving ether, the animal suffers but slightly, if at all, and the flesh is preserved fresh and sound for months, with less cost than the ordinary mode of salting. The oxygen being entirely removed from the body of the animal and displaced by the carbonic oxide, all parasites, trichinæ, &c., are probably destroyed, and the flesh of swine rendered as harmless as possible. This process of preservation will avoid the necessity of the use of salted meats, and enable both the city and the country consumer to have a supply of fresh and healthful meats at a less cost than heretofore, while whole carcasses can in a very short time be preserved at or near the place where the animal is raised—at the West, in Texas or South America—and sent to a distant market at small expense.

This invention promises, therefore, to have an important bearing upon the supplies of healthful animal food throughout the world.

CHARLES L. FLINT,

Secretary of the State Board of Agriculture.

Boston, January 22, 1868.

A P P E N D I X .

REPORTS OF DELEGATES

APPOINTED TO VISIT THE

AGRICULTURAL EXHIBITIONS.

ESSEX.

According to appointment, I visited the forty-seventh annual exhibition of the Essex County Agricultural Society, held at Haverhill, September 24 and 25. The society, one of the oldest and most flourishing in the State, and the only one in Essex County, has no local grounds for its exhibitions, but itinerates about the county from year to year, no doubt to the advantage of the society in many respects, and to the disadvantage, in others.

The show of cattle, though good, was not quite up to what I expected to see, and hardly did the society credit, as I think. There were a few good oxen on exhibition. A very good herd of eighteen cows, by William B. Carleton, of Haverhill, and other single entries worthy of mention. There was a good number of excellent young horses and colts on exhibition, showing good judgment and care in breeding and rearing.

The show of agricultural implements was quite large, induced, no doubt, by a special premium of \$25 offered by the president of the society. There was, also, a very interesting trial of twelve or fifteen ploughs on the first day of the fair, in which the people manifested a strong desire to find out which was the best plough.

The ploughing match that came off on the second day, was a grand affair,—by far the best thing of the kind it was ever my good fortune to witness. There were above twenty teams entered, among which were six or seven entered by boys under nineteen years of age, who competed for special premiums offered by the president of the society.

Notwithstanding the field of operations was a mile or more from the village, there was a large number of spectators on the ground, and a good degree of interest and even enthusiasm manifested on the part of all concerned. The boys did exceedingly well, and were amply

rewarded for their efforts, not only by the liberal premiums awarded, but by the golden opinions won from a large crowd of spectators.

But it was at the town hall that the interest and efforts of the members of the society seemed to culminate.

The exhibition of a large number of most excellent specimens of apples, pears, peaches, and especially of grapes, showed that the people of Essex County had given a commendable degree of attention to the cultivation of fruit.

The vegetable department was mostly supplied by Samuel A. Merrill, of Danvers, and Richard Webster, of Haverhill, who did themselves great credit by their exhibitions.

The bread and butter departments were by no means neglected, and every available space about the hall seemed to be filled with articles of domestic manufacturing and the fine arts.

The floral exhibition was a magnificent affair, and needed to be seen and studied to be appreciated.

Too great credit cannot be given J. F. West, of Haverhill, for the interest and good taste manifested on his part in this unusual display of flowers. Large crowds were in attendance at the hall both during the days and evenings of the exhibition. About noon of the second day, a procession was formed in front of the town hall, and escorted to the North Church, where the people were delighted with music by the choir, and instructed by an able and very practical address by the Rev. R. H. Seeley, D. D., of Haverhill, on the subject, "What shall we do with our Farms?"

At the close of the interesting exercises at the church the crowds of people were conducted to another feast of fat things prepared at Music Hall. Here the physical man was not only regaled with the best the earth affords, but excellent speeches by Governor Bullock, General Banks and others, did all for the intellectual man that could be desired on the occasion.

One excellent feature of the exhibition I would not pass in silence, viz.: the promptness with which the programme was carried out. For instance, the ploughing match was put down to come off at ten o'clock, and though there were from twenty to twenty-five teams entered to plough, in less than five minutes from the time the clock struck the hour, the word "go!" was given, and every team was at its work.

In closing this Report, I would not fail to express my obligations to the president and secretary of the society, for the gentlemanly manner in which they entertained me during my stay at Haverhill.

H. S. WARD.

MIDDLESEX.

As your delegate I attended the seventy-third exhibition of the Middlesex Agricultural Society's cattle show and fair, held at Concord, on the third and fourth of October last. Having visited them on a similar mission at their sixty-ninth exhibition, it enabled me to judge of the improvements in the past four years. I now found them located near the railroad depot on a fine tract of land of sufficient extent to enable them to erect every convenience for all departments in a permanent manner, of which at present they have only the stables for valuable horses, and hay lofts. The hay fed out by the society on the two days amounted to about \$100. The cattle were in covered pens, seeming as well contented as they would be at their own homes. It is contemplated to erect a large shed or sheds with stanchions in which the neat stock can be secured for the better view by committees and visitors. Their half-mile track is as well laid out and graded as any in the State. They have no hall as yet, but after the dinner was partaken of by a large and intelligent company, their president, Addison Gage, Esq., called the attention of members to a plan of a new hall that they proposed to build, which call was responded to with such interest as I never before witnessed. Over \$5,000 were subscribed by gentlemen who had means, and a desire to continue this old and useful society; and they were men without the horse-jockey in them. Was not the meeting of such men by the farmers a great benefit? Does it not engender a feeling of pleasure to know that their occupation is one that can be made the most pleasant and independent if they will but strive to invest all their energies and capital in their business, the same that others do in theirs? And I will say that they had invested, when such teams of oxen and horses as were there, either for trials of strength on the cart or plough, and in both departments there was a feeling to win if a fair opportunity was offered, and so far as I could judge, they had that opportunity, and performed their parts in such good time and manner that I felt relieved to know that it would not be my duty to decide who should have the first premiums. I would suggest to competitors the advantage of preparing themselves and teams with such ploughs as they intend to compete with before coming out to the trials. When they know that their ploughs are set just to the desired width and depth, and the team all trained to start with an assurance of success, such preparation will greatly conduce towards establishing such order in all the operations on the farm.

In the large tent were exhibited as large a collection of fruits, flowers and vegetables as I ever saw at a county show.

APPENDIX.

v

In the pens were collected many of the finest animals of the best breeds of neat cattle, swine and breeding mares.

On the track were exhibited some if not the best trotting and family horses in the country ; and while thousands were crowded together to witness some feat or other that most interested them, I was unable to detect the least intoxication by liquor or anger. Can it be said with as much truth that a like crowd can be gathered in the city without a broken head, if not bloodshed ?

In conclusion allow me to say that, when I left, on the eve of the second day, it was with a feeling of pleasure that I could report that this old and honorable society was becoming rejuvenated in a manner that will repay the State for its bounty in a hundred fold.

I here tender my thanks to the officers and members who contributed so largely to the comfort of your delegate.

JAMES THOMPSON.

MIDDLESEX NORTH.

The annual exhibition of the Middlesex North Agricultural Society was held at Lowell, September 26th and 27th.

It will not be necessary for me to say anything about the fine grounds and commodious halls of this society, as they have doubtless been described by previous delegates.

In the hall the display of pears was very fine, most of the desirable varieties being represented. There was also a very good show of grapes. Of apples, I found the same report as in most other localities of the State visited the past season,—a small crop and indifferent quality.

The ladies had lent their usual aid in giving interest and variety to the collection of beautiful articles on exhibition.

The show of vegetables was not large, but very good. An ambitious dentist of Lowell, not to be outdone by any farmer, displayed, as trophies of his prowess, a half-bushel measure filled with human teeth, drawn with many a sigh from the aching jaws of suffering humanity.

There was a very creditable show of milch cows, but of other cattle not as good as I hoped to have seen. It appeared to me as singular, that premiums should be offered for cows of the different improved breeds, and none for thoroughbred bulls. If there were any on the ground, they escaped my notice. I was sorry to see a number of grade bulls.

I trust the time is not far distant when our agricultural societies will cease to offer premiums for animals that can give no promise of improvement to their progeny.

The show of poultry was not large, but very good. Swine were represented by a few specimens. Sheep, I am sorry to say, there were none to speak of.

The dinner, which is a very pleasant feature of the exhibitions of this society, was nearly over when I reached the hall, and I found a gentleman;—one of the representatives of the people of Massachusetts in the Congress of the United States,—entertaining the company with a speech in which he took occasion to say that he had always opposed the establishment of an agricultural college, and gave it as his opinion that it would surely fail. That it could succeed he pronounced inconsistent with the nature of things. Just what things, the gentleman did not tell us; but suppose it must have been the ungenerous things he had said against it. He thought it useless, also, to teach anything of agriculture in our common schools. The farmer must get his special education on the land only. He represented the occupation of the farmer as hard, coarse and repulsive, and thought as soon as our young men were educated enough to fit them for any other business, they would leave it on the first opportunity. Hence the inference was, to keep men on the farms they must be kept in ignorance. Therefore, he would have no colleges for farmers. He would organize a corps of learned professors, who should perambulate the State during the summer season, and observe the efforts of the untaught farmers to dig their education from the ground, and in the winter give lectures on the soil and its wants, and, like Dr. Hornbook, “just its disease and what would mend it, at once they’d tell.” But just how and where he expected to find and educate those wonderful professors the gentleman did not inform us. In the days when prophets were held in higher esteem than now, there were false prophets,—prophets of Baal,—whose predictions came to naught. Such, I trust, will be the fate of the doleful foreboding of the gentleman alluded to.

I did not remain to witness the exhibition of horses which took place the following day, but am informed that there were many fine animals on the ground.

WILLIAM BIRNIE.

MIDDLESEX SOUTH.

The annual exhibition of the Middlesex South Agricultural Society was held at Framingham, on the 17th and 18th of September, according to assignment. Your delegate was unable to attend until the second day. The exhibition was an exceedingly interesting one. The collection of animals on the ground was large; and it presented a variety, which is rarely seen in one locality, in such perfection. It is not easy to see how the same pastures and fields can feed, profitably, the Shorthorn, the Ayrshire, and the Alderney, alike; but there they were on exhibition. And they presented themselves in a manner which might well attract the attention of the most critical observer. The well-known herd of Shorthorns in the town of Framingham, was present, and indicated good care and attention during the past season. The animals repaid well the most careful inspection.

The two herds of Alderneys, which appeared in rivalry, were extremely attractive. It is seldom that so many rare and valuable animals of this breed are brought together. While both were good, the difference between them was striking. One of these herds, which has long been bred in this country, seemed to have reached a degree of size, strength and thrift, quite remarkable. Whether it is the result of climate, breeding, or feeding, it might be difficult to tell. But their solid proportions, strong bones, and vigorous muscle, all showed that they had enjoyed some unusual advantages since their ancestors left their native island. And yet one could not fail to perceive the admirable structure of the competing herd of more recent importation. While a peculiar delicacy was very observable, it was evident that some of these animals had been developed to the best standard of a dairy cow of this description. In the quality of their bone, shape of quarters, width of hip, firmness of shoulder, and depth of carcase, they are almost unrivalled. And it does seem to your delegate, that with a judicious selection of strong and vigorous males, this herd might be developed into one of the best known.

The exhibition of horses indicated care in the selection, and judgment in the breeding of this class of animals. Any departure from coarse-headed, thick-shouldered, large boned, heavy gaited horses, is agreeable; and the development of style and quality in connection with speed is always desirable.

A great deal might be said in favor of the swine on the grounds. The combination of the length and weight of the coarse breeds, with the thrift and rapid growth of the finer, has been brought to a high degree of perfection by the members of this society. And if there is

such a thing as a hog that can be raised and fattened profitably in Massachusetts, it might have been found in their pens.

Without enlarging upon the exhibition of fruit and vegetables in the hall, which is always creditable with this society, your delegate cannot but express his satisfaction with the many indications which he found, of care and attention to the accurate business of agriculture. Systematic devotion to special objects, the only profitable scheme of farming known in this State, was manifest everywhere. And in careful breeding and careful cultivation, there was abundant opportunity for the student to apply accurate and useful observation.

The address on the occasion was delivered by Judge French. It was an account of the flowing of the Sudbury meadows; and was listened to with that attention which might be expected from those who have a personal interest in this long and difficult controversy between the farmers and manufacturers of this section of the Commonwealth. This address was delivered at the dinner-table—a plan which may have its advantages—but it undoubtedly has its disadvantages. It is evident that no address, whether upon agriculture, education, politics or religion, can be equally adapted to a church, a hall, an out-door audience, and a dinner-table. An address is one thing—an after-dinner speech another and quite different thing. And a speech worthy of being called an agricultural address, containing instruction and an appeal to the intelligence and activity of farmers, should not form a part of a festivity or a mere social entertainment. The old-fashioned mode of delivering these addresses in the village church had great advantages; so has the modern one of delivering them in an appropriate hall. But no man can tell the trial of instructing an audience in rivalry with trotting horses or a tempting dessert until he has tried it.

Your delegate cannot speak too well of the activity and energy displayed by the Middlesex South Agricultural Society.

GEO. B. LORING.

WORCESTER NORTH.

The fifteenth annual fair of the Worcester North Agricultural Society was held on the 24th and 25th of September. Both days were pleasant, the attendance large, and an enthusiasm manifest, which augured well for the future of this society. If the exhibition of stock, fruit, vegetables, farming implements and domestic manufactures, and especially of men, is as good throughout the State as at Fitchburg, our agricultural societies are not failures, and their epitaph need not be

written for some years yet. The attendance the first day was estimated at some five thousand, and the second day at eight thousand. The very presence of so many stalwart and intelligent yeomen, with their wives and daughters, all in their holiday attire, behaving decorously, and exhibiting intelligence, manliness and self-respect, in their countenances, words and actions, is one of the most pleasing features of these agricultural exhibitions. At Fitchburg, we are most happy to say, everything was done decently and in order. Though the crowd was large, we noticed no boorish conduct, nor a single person under the influence of intoxicating liquors. As we have passed through Worcester County occasionally from our childhood, we have been led, from the appearance of the lands, barns and houses, to put a high estimate upon the farms of the county, and the conclusion was that the farms were an index of the farmers. Our conclusion was verified on seeing them together at Fitchburg, and our faith was lost in sight.

This was the first exhibition of the society on its own grounds, and the attendance larger and more enthusiastic on this account. These grounds comprise twenty-five acres, pleasantly located, well watered, beautified with groves on the north and south, and surrounded by a substantial board fence. At present, the president, secretary and exhibitors have to dwell, like Abraham, in tents, but we doubt not the enterprise of the society will soon lead to the erection of suitable structures for the accommodation of man and beast. This struck us as the great want of the Worcester North Society. Tents may have been well enough for the patriarchs, with their nomadic habits and mild climate, but New England is on a higher plane, both literally and figuratively, than Canaan, and ceiled houses for men and warm shelter for stock are what our latitude and civilization demand, and on our next visit to Fitchburg we expect to see this demand satisfied.

The ploughing match occurred on the morning of the first day, and we noticed a division of the teams into oxen and steers, the former competing separately from the latter, a division which we recommend for adoption by other societies.

The exhibition of neat stock, sheep, swine and poultry lasted only through the first day, and was large and every way creditable to the enterprise of the farmers of North Worcester. We respectfully suggest to the managers that the exhibition of this kind of stock should continue through both days. Every well formed, thoroughbred animal is an educator, and should give lessons for more than one day, especially as the number of scholars present is generally larger the second day than the first. The original name of these exhibitions was "cattle shows," but a visitor on the second day may well ask, "Where are the cattle?" The exhibition on the second day has, in too many of our societies,

degenerated—perhaps some would say has been elevated—into a horse show, and an agricultural horse trot has come to be the leading feature of the exhibitions. We do not object to the culture and exhibition of that noblest of animals, the horse, but if our fair grounds should degenerate into mere race courses, and jockeys are the leading characters on these grounds, the farmers will be sure to retire in disgust. We are happy to say that at Fitchburg the horse did not cast all other animals into the shade. There were fine specimens of Shorthorns, Ayrshires and Alderneys, as well as mixed and native breeds. We were particularly gratified to notice some full-blooded stock intended for exhibition and not for a premium. Messrs. Whitman and Adams of Fitchburg and Gates of Leominster set the noble example of contributing valuable animals for the benefit of the public, without expectation of other reward than the consciousness of doing a noble deed;—by the way, a higher reward than green-backs, silver spoons or golden goblets can possibly furnish. We were glad also to notice that the committees on premiums were not restricted to giving only one premium to one person, and compelled, as in some of our societies, to pronounce a crop, animal or article a second best which really should stand in a much lower grade. We are aware that the argument for the scattering of the premiums is, that it enlists more competitors, but it does not seem to us that this reason of policy should outbalance the weightier one of truth and justice. If one person merits all the premiums in one division, justice demands that he should have them all. At Fitchburg we noticed Mr. A. Whitman carried off all the premiums for Shorthorns, Mr. E. T. Miles all for Ayrshires, and Mr. John Brooks all, with one exception, for Alderneys.

After due respects had been paid to the stock, the officers and members of the society, with their ladies and invited guests, sat down in patriarchal style to a bountiful repast, to which ample justice was done. The feast of reason and flow of soul followed in due succession, introduced by a neat and spirited speech by the president, Joshua T. Everett, Esq., of Princeton. These social dinners should constitute an element at all our agricultural fairs. A good dinner is highly conducive to good feeling, and the cultivation of our social natures, with charity and all its train of graces, is carrying out the design of Him who made us social beings, and whose mission on earth was to bring peace and good will to men. The great want of the farmer's life is intercourse with his fellow-men. The farmer's wife especially leads an isolated life, and these fairs should be made of such a social nature that they will tend to furnish food for mental growth and for the development of charity, good manners and all the amenities of life. We rejoice to say that at the dinner table at Fitchburg the ladies seemed to be in the majority, as they almost always are in every good cause. The interest

manifested by the ladies at Fitchburg is worthy of praise and ought to be emulated in other places. We desire to express our personal obligations to the efficient wife of the efficient secretary, Mr. Lewis H. Bradford, not only for kind hospitality, but for driving us around the village and into the surrounding country. We shall vote for women's rights, if men can always be so pleasantly driven.

We would suggest to the managers of the Worcester North that an addition might be made to the interest and profit of their fair, if a meeting could be held in the evening for social intercourse and agricultural discussion. This has been tried in other societies with success, and we trust increasing attention will be given to it throughout the State. Thoughts should be sown broadcast at our fairs, and they will return some thirty, some sixty and some an hundred fold. An ox may be estimated by his girth and weight, but mind is the standard of the man, and the development of man, and not his mere amusement, must be the object aimed at by our agricultural societies, if we would avoid the criticisms of the "Springfield Republican" and the just condemnation of the public.

On the last and great day of the fair at Fitchburg, came the horse, a greater crowd, the address by George E. Towne, Esq., (which was a business man's view of the farmer's occupation, replete with practical suggestions for a thorough and systematic management of it,) the dinner, with its after speeches, and the final adjournment, leaving a replenished treasury and many pleasant remembrances.

Our thanks are due for kind attentions and hospitality shown by the president and secretary, also by Messrs. Billings, Adams and many others.

ALEXANDER HYDE.

WORCESTER SOUTH-EAST.

Your delegate, appointed to attend the exhibition of the Worcester South-East Society, held at Milford, reports as follows:—

On my arrival in the morning of the first day, I found the ploughing, which was done with oxen, had already commenced, and not understanding the locality, did not witness that part of the exhibition, but heard it well spoken of.

The park which the society occupies is a fine one, and the hall good and substantial,—the grounds belonging to private individuals, the buildings to the society.

The show at first appeared somewhat thin, but before eleven o'clock the stock apartments were more than full. Their heavy oxen were not up to the standard, which might have been expected, judging from the

display of steers and young oxen. Several herds, consisting of cows, heifers and calves, were on exhibition, which would do credit to any society. Some very choice specimens of the Jerseys, as good as I have ever seen. Of their working oxen I cannot speak too highly. I think I never saw so good training. It was truly surprising to see what command the driver had over his oxen,—not by the use of the whip, but by the *still small voice* that seemed to inspire his team with life and action. One incident was particularly noticeable. After trying twice to back the load up the hill, and having almost succeeded, one man withdrew from the conflict, saying that he would rather lose the prize than whip his team. Would that we had more such men to train and drive our oxen.

The show of swine was very fair. A few very nice animals.

There was only one lot of sheep on the grounds.

There was a fine show of breeding mares and colts, some of which were held at fabulous prices, and most of them from noted stock. Judging from the young stock of horses *on exhibition*, as well as from some old ones, we should think that in the future there would be no lack of good horses within the limits of this society. Some very fine pairs of matched horses were shown, as well as a large number of good single driving horses. These all made a good display on the track.

As usual, the programme ended with a *horse trot*, which went off, we think, to the satisfaction of the crowd.

The display in the hall was very good, but not as full in some departments as it might have been. There were some very nice specimens of apples, good for any year, but particularly so for this. Some excellent winter squashes, that looked good enough to eat. The ladies exhibited some very fine specimens of domestic and fancy articles, which showed no lack of interest on their part.

On the whole we consider the fair a success, and one which does credit to the society.

The address, by Judge Russell, was one calculated to instruct as well as interest, and was listened to with marked attention.

I will close this Report by acknowledging the courtesy of our friend, Mr. Knowlton, and the officers of the society.

H. S. PORTER.

HAMPSHIRE, FRANKLIN AND HAMPDEN.

As delegate from the State Board of Agriculture, I attended the forty-ninth annual exhibition of the Hampshire, Franklin and Hampden Society, which was held on their grounds at Northampton, October 3d and 4th. I had seen some, and heard much of the Durham stock raised

in this section of the State, "but the half had not been told me." In conversation with the Hon. Paoli Lathrop, of South Hadley, an extensive breeder, and one of the pioneers in improving the Shorthorns or Durhams, he said he had been in the business of raising thoroughbred Durhams for quite a number of years; that the demand for the first class of animals was always greater than the supply, and at the present time the prospect for raising such stock is better than ever before. The Durham bull owned by M. J. Smith, Esq., president of the society, which took the first premium, was raised by Mr. Lathrop.

The Durham bull owned by Stephen Heyward, Jr., seventeen months old, took the second premium. This was one of the finest animals I ever saw. He was raised by George T. Plunkett, Esq., of Hinsdale, from his famous bull valued at \$5,000. The question may be asked, why he is so valuable? Because he is said to be *best*, known here or in Europe. His stock is in demand for exportation. The tables are turned. Old England's Johnny Bulls now send to Hinsdale for their supply of bulls. Perhaps I should mention in this connection other fine animals,—the Ayrshires and Jerseys were there; but, in this locality, the Durhams predominate.

One herd of fifty-nine Kentucky Durham steers, fattened there and sent to Albany for beef, were purchased by N. Day and S. Alvord, for the purpose of completing them by stall-feeding them this winter.

I was told that many farmers go into this operation, not only for the growth and rise of the animals, but for the purpose of increasing their manure, which must be had to grow that "dirty weed, tobacco;" yet, I suppose, the most profitable crop to raise on their river "meadow lands."

A town team from Deerfield, sixteen yoke, averaging about 4,000 pounds, I should judge, were mostly grade Durhams. The milch cows were not so numerous, but there were some very fine animals, and great reports were made of their product of milk and butter; and one cow with one-half of her milk, in June made seven pounds of butter; this reminded me of a man I once knew who kept but one cow and sold about one-half of the milk to his poor neighbors; he would always milk in two pails—the first half to sell, the remainder for his wife to make butter.

The several herds, together with other young cattle, were all very good; and, on the whole, it was a real cattle show.

Sheep, swine and poultry were well represented.

The exhibition in the hall of agricultural implements, fruit, vegetables, bread, products of the dairy, domestic and other manufactured and fancy articles were in abundance, and was creditable to the exhibitors, but time and space will not allow me to particularize. And there is no necessity for it, for the whole thing was ably reported and published in the local newspapers at the time for the benefit of all concerned.

The address at the town hall in the evening, by the Hon. Daniel Needham, of Groton, Secretary of the New England Agricultural Society, was listened to by an intelligent audience. His subject—"The Necessity of Education to the Farmer."

The second day was devoted to the exhibition of horses, and, as usual, brought together the greater number of people. The trial of draught horses was good; there were some very good horses on the track, and, if we take the word of the owners or drivers, there were many such; "for my horse is, all things considered, the best."

The colts were present in large numbers, and went to show there was a strong desire for improvement in raising good horses; and, like raising cattle, it is only the good ones that pay best.

In the afternoon came off the trotting and running, which was very well done, as every one said, so it must be true.

And with the very efficient officers, committees, marshals, and the enlivening strains of music from the brass band, so at the close, the verdict of the crowd was, a *success*.

I cannot close without rendering my thanks to the officers of the society, and to Mr. Porter, member of the State board, for their attention, courtesy and hospitality.

THOMAS BILLINGS.

HAMPSHIRE.

As delegate to visit the Hampshire Agricultural Society, I submit the following Report:—

The eighteenth exhibition of this society was held on their fair grounds in Amherst, September 24 and 25, two most beautiful autumn days, and was pronounced the best ever held by the society.

We were led to expect much from this society, from a knowledge of the location,—the well cultivated farms and substantial farm buildings indicating thrift and energy,—and were not disappointed.

This society is one of eight in the State out of debt, and embracing as it does some of the best farming towns in the Commonwealth, a noble yeomanry, many scientific men, the State Agricultural College, it has, indeed, a bright and flattering prospect before it.

There were exhibited four strings, or in all 162 oxen, as town teams, and fully 100 head of other neat stock. There were many noble animals, mostly grades. I had hoped to see more thoroughbreds. The working oxen were not as large, on the average, as I expected to see. There are two reasons, probably, for this. One is, the fact that many

farmers purchase their oxen more or less matured, instead of carefully breeding and growing them themselves. The other reason is, that more labor is required of them than by the hill farmers.

There was a large number of horses entered for premiums, making a very interesting part of the exhibition. A number of two and three-year-old colts were noble animals. More than one hundred and sixty dollars were awarded for horses, not including premiums for speed.

Sheep, swine and fowls seemed to occupy their due proportion of space and attention.

The display in the hall deserves as much notice as any part of the exhibition. Many of the manufactured articles seemed to be from the immediate vicinity. Among them, carpenters' tools, by William Kellogg, of Amherst; repeating shot-guns, by Roper Rifle Co., of Amherst; gold pens, by Haskins Brothers, of Shutesbury.

The specimens of rye, winter wheat and corn were particularly fine.

A table extending the entire length of the hall was filled with a great variety of products, by Sunderland people alone.

A few figures will give some idea of the display in the hall. More than 150 varieties of plants, in pots and tubs, by President Clark, of Amherst, and W. H. Lyman, of Leverett; 58 entries of honey, wines, jellies and pickles; 34 entries of bread. David S. Cowles, of Hadley, had the largest collection of fruits, comprising 46 varieties.

Professor John Bascom, of Williams College, delivered the annual address on the afternoon of the first day. Subject, "The Peculiar Education the Farmer requires." It was listened to with marked interest.

After dinner on the second day, the society was first addressed by the president, Austin Eastman, who also introduced Hon. William B. Washburn, of Greenfield. Mr. Washburn congratulated the society on the success of the exhibition; said it was better than he expected to see here, especially the display in the hall. He referred to the interest felt in the Agricultural College.

Dr. Nathan Durfee, of Fall River, one of the trustees of the Agricultural College, and a member of this Board, was loudly called. He remarked the striking contrast between the beautiful and fertile fields of Hampshire and the rock-bound coast and sandy barrens of Bristol County, stating also some facts, showing what careful culture, aided by science, has done in some instances in turning those barrens to fruitful fields.

Hon. Edward Dickinson, of Amherst, was then introduced by the president as father of the society,—the preliminary movements suggested by Mr. D., some eighteen years ago, having resulted in gaining a charter from the State. Mr. Dickinson traced, as results of this society, the growth and increase of important interests of the town.

Professor Stockbridge, of the Agricultural College, made interesting remarks in regard to practical agriculture.

President Clark was the last speaker, and called the attention of the audience to a large life-like painting of Marshall P. Wilder, then hanging upon the wall over the speakers' stand, which had recently been presented to the Agricultural College by a Boston gentleman. And as the audience seemed almost to be in the presence of the honored and venerable man, President Clark recounted some of the noble acts of Mr. Wilder, and some of the benefits resulting therefrom to the cause of agriculture in this State, in the United States, and in the world; and remarked how fitting it was that his should be the first portrait to be hung on the walls of the college.

C. SANDERSON.

HAMPDEN.

Having by assignment of the Board attended the annual exhibition of the Hampden Agricultural Society, holden at the Hampden Park in Springfield, on the first and second days of October, 1867, and knowing that to be a stock-breeding region to considerable extent, we had expected to see a large number of thoroughbred animals on the grounds. Our hopes in that respect were not fully realized. Yet it is fair to affirm that in point of quality the show was *good*.

The cattle, we judge, were not on the grounds more than from three to five hours, after which it was understood the track was to be cleared for another purpose.

After Josh Billings had attended the Agricultural Fair at Billingsville, where he observed several strings of onions, bunches of turnips and other vegetables, many yokes of oxen and sheep, none of which excited any sympathy, he said it was evident the people "hankered after a good Agricultural Hoss Trot." We cannot, judging from what we witnessed at Hampden Park and elsewhere, regard the people of Billingsville as singular in their passionate fondness for practical trotting.

In our view, the horse fanciers of Springfield and vicinity ought to have been satisfied with one whole day, or at least have given one whole day to other branches of the show.

So far as we observed, however, the trotting at Springfield on the occasion of our visit was fairly carried on, and our ears were *not* saluted with disgusting profanity, as had been the case at other places, and enough of it to sicken a well-bred dog. If we are to have trotting at our fairs it seems to us that it should be so conducted as not to be an eyesore to the better class of admirers of the noble horse.

No place in the State has better facilities for trotting than Hampden Park, there being a mile and half mile track. Seats, also, which will accommodate three thousand persons, recently covered with gravel roofing, which, we trust, will prove convenient and durable.

Here we leave the horses and return to the neat and other stock.

Among the notable animals on the grounds were nine Devon cows and heifers and two bulls, shown by William Mattoon of Springfield. Mr. Mattoon also showed a most beautiful yoke of Devon oxen.

William R. Sessions of South Wilbraham, had eleven Shorthorns and grades, among which was a pure bred bull, together with a herd of young Shorthorns and grades. They were nice animals.

H. M. Sessions had fifteen pure bred Devons, old and young, and all the progeny of one heifer since 1854. Mr. Sessions, it must be allowed, has been very successful, both as regards freedom from disease and in raising good specimens of the breed.

G. W. Convers of East Longmeadow, showed one pair of well-appearing four years old Durham steers ; weight, 3,620.

George H. Estes of Springfield, had a cow, the net profit from which was in one year ninety-seven dollars and twenty-five cents, (\$97.25.) She gave during the time 3,176 quarts milk.

William Birnie, of Springfield, showed thirteen Ayrshire heifers, two bulls, (young,) two cows, and one three years old bull, all carefully and skilfully bred, fine looking all. Some of the heifers, it seemed to us, were the best we ever saw of that excellent breed of cattle.

Mr. ——— Ashley, of West Springfield, showed a pair of oxen weighing five thousand and eighty lbs., (5,080.) Fat truly, but how long they had been in taking it on we did not learn.

P. Stedman & Son, Chicopee, were on hand with a Shorthorn bull, Duke of Carlisle. This animal loomed up well in a distant view, and upon a closer inspection we observed many points of excellence. The pedigree was given, which should be the case with all blood stock, as it facilitates the labor of committees.

The swinish tribe did not abound extensively.

O. H. Chapin, of Chicopee, had one litter of fair-appearing pigs, nine weeks old, Cheshire and Suffolk cross-bred.

J. C. Pease, of East Longmeadow, had a good boar, (Prince Albert,) nine months old.

Of agricultural implements, there were the Clipper, (appropriate name,) Buckeye, Union and Kniffin mowing machines, the Kniffin, New England and Bay State horse-rakes. Two sizes of Grant's feed-cutter, and a plough by the same exhibitor.

The fruit, flowers, fancy articles, household manufactures, vegetables, sewing machines, &c., &c., were exposed in the City Hall, which was well filled with tasty articles most tastefully arranged.

The fruit was *good* for the season.

In the display of pears, Rev. Dr. Ide, of Springfield, seemed to excel. His plates of Sheldon, Beurre Bosc, Beurre d'Anjou and Beurre Clairgeau, made the secretion vulgarly called mouth-water flow, though we made an effort to suppress it. There were excellent dishes of Rebecca, Iona, Israella, Allen's Hybrid and Delaware grapes, which strongly tempted and reminded us of the necessity of practising self-denial under the circumstances.

Apples similar to those of other localities, ordinary.

Butter, of which there was quite a display, appeared remarkably well.

The Wilbraham Manufacturing Company had on exhibition some cheese which, in our judgment, will command a high figure in market.

The ladies, too, had spared no pains to make the hall attractive by the exhibition of everything in their line, from a pin-cushion to a counterpane.

Sewing and other machines were being operated by parties interested in their sale.

On the whole, the show was a success.

Our thanks are due and cheerfully tendered to William Birnie, President Dwight, Secretary Bagg and others, for courteous attentions.

ASA CLEMENT.

HAMPDEN EAST.

The annual exhibition of the Hampden East Agricultural Society, was holden at Palmer, October 9, upon the trotting park of that society, near the village.

The exhibition of bulls and cows was very commendable; also that of sheep and swine.

The most prominent in the department of stock, was a grand display of oxen and steers, consisting of about sixty yokes of oxen and four years old steers, nearly all of which were Shorthorn grades of a very high order, indicative to every observing mind of the superiority of blood stock.

Very fine collections of vegetables, grains and fruits, with the usual variety of ornamental contributions from the hands of the ladies, were on exhibition in the vestry of the village church.

The collection of agricultural implements was not large. Several different patterns of mowing machines were noticed. Each specimen

was sustained by spirited arguments from its particular representative, setting forth its peculiar merits and advantages.

The horse department was well sustained by the character and quality of the horses on exhibition. Some very fine two years old colts, bred in Palmer, were noticed.

The track was rendered attractive by the display of good action and speed on the part of the several horses presented.

At three o'clock, P. M., we were invited to listen to an address by T. S. Gold, Esq., Secretary of the Connecticut State Board of Agriculture. Subject—"Advantages and Disadvantages of a Farmer's Life." It was full of admirable suggestions, and was eminently instructive.

My thanks are due to the officers of the society, and many other gentlemen, for kind attentions received.

JOHN JOHNSON, Jr.

FRANKLIN.

In discharge of my duty as a delegate of the Board, I visited the eighteenth exhibition of the Franklin County Agricultural Society, at Greenfield, on the 26th and 27th of September.

I found the society to be the owner of a beautiful exhibition park adjacent to the village, which, in some of its aspects, has a striking resemblance to the ancient Roman amphitheatre, and peculiarly adapted to such an exhibition; but which is hardly capacious enough to display all the domestic animals of the county, as the rapidly growing interest in agriculture and the society indicates it will be required to.

On first entering the inclosure, it was strikingly evident that I was in the company of a wide awake and thriving agricultural people, as well as that it was a gala day for the whole county. The people were there, male and female, all on the common level of intelligent humanity, all on exhibition; to see and be seen, to teach and to learn, seemed to be the order of the day. The first day, as is usual, was devoted to neat stock, sheep, swine, &c., and an address by the orator of the day, Dr. George B. Loring. The second to horses. The exhibition of neat stock was very extensive and varied. There were many specimens of all the thoroughbred breeds, and all sorts of grades and crosses. There were on the ground nine distinct herds of carefully bred and nurtured animals, four of which contained more than a hundred animals. In the important department of young stock, the exhibition was unrivalled in variety, number and quality, indicating that the farmers of the county are making a business of rearing catle, and that skill, intelligence and

thought are being directed to that pursuit. Sheep were on exhibition by the hundreds, of the fine, coarse, and middle-wool varieties, and in the departments of swine and poultry the number was large and the quality was excellent. The number of horses on exhibition the second day was large, and the animals were fine, of the several classes. This portion of the show had little of the fast horse and fast man about it, but was a commendable exhibit of the efforts of the farmers in horse-breeding, and showed skill in the selection of the stock-getters, and care and success in the rearing and training of the animals. The exhibition in the hall, of pomological, horticultural and mechanical specimens, and of domestic manufactures, was highly flattering to the intelligent skill and success of the exhibitors. It would be an arduous task to describe in detail all that was worthy and commendable in this exhibition. It was literally a cattle show, a horse show, a horticultural exhibition, and it had about it an air of life, interest and competition that indicated clearly that the people of this county are on a rapid march of agricultural improvement, and that its every department is receiving the benefit of intelligence, thought and study. Every facility was given me by the officers and members of the society to examine all departments of the exhibition, and to become acquainted with their plans of operation, and the modes by which the degree of success in the different branches of culture was attained.

L. STOCKBRIDGE.

HOUSATONIC.

Your delegate, to whom was assigned the duty of visiting the Housatonic Agricultural Society, attended at the exhibition of the society at Great Barrington on the 25th and 26th of September.

No one can enter upon the grounds of this society without remarking how strikingly they are adapted to the uses to which they are devoted. A fertile tract of land of about thirty acres, and as level as a threshing floor, affords ample space and accommodation for all the purposes of an agricultural exhibition. A range of lofty hills shuts in and seems to consecrate the spot to the uses of intelligent and scientific agriculture.

The hall, situated on one side of the amphitheatre, and provided with two covered balconies extending its entire length, furnishes excellent conveniences for the spectator to observe the different portions of the exhibition.

Of the display within the hall, the butter and cheese most attracted the attention of your delegate. There were thirty-nine lots of butter, almost all of which was of great excellence. The display of cheese was not so large, but the quality was very fine. The farmers and

farmers' wives of the Housatonic Valley may well congratulate themselves on such productions of the dairy.

Without the hall there was a good exhibition of the various kinds of farm stock. The show of neat stock constituted the most noticeable part of the exhibition. The Ayrshires, Jerseys and native stock were very fairly represented. On this occasion, however, the Durhams carried off the palm. The display of this breed of cattle was large. Their full, well rounded, symmetrical and stately forms were worthy of the highest admiration. The working oxen seemed to be capable of anything that a combination of docility and immense strength can achieve. The fat cattle, from the large quantity and excellent quality of the beef they afford, cannot fail to repay the farmer for his labor and expenditure of money upon them.

There were many features of the exhibition to which your delegate would be glad to refer, but must content himself with saying generally that it was a very admirable one. This fair of the society was attended with great success, and the society has evidently been in the hands of intelligence, energy and enterprise.

Your delegate was very courteously entertained by the society, and he is under especial obligations to Mr. T. D. Thacher, of the State Board, for his kind attention.

GEORGE A. KING.

HOOSAC VALLEY.

As delegate from the Board of Agriculture, I attended the annual cattle show and fair of the Hoosac Valley Agricultural Society, held at North Adams September 17, 18 and 19, 1867.

I regretted my inability to be present on the first day of the fair. By being deprived of this privilege, I failed to see the cattle and sheep on exhibition; but from the representation of officers of the society and others I learned that this part of the show was highly creditable and satisfactory.

The exhibition of horses was fine, and the colts shown gave evidence of great care in breeding, and large promise of future usefulness and beauty; and when trotted out, that their action and style might be shown, apparently elicited almost as much interest as did the trotting matches which followed.

The show in the several classes in the hall was large and creditable. Fruit, flowers, vegetables, domestic and heavy manufactures, were all in large abundance, and of high order of merit.

The society gives evidence of vital energy and thrift. The attendance at the show was large; the action of its several officers was prompt and energetic in carrying out the details of the fair. Good order prevailed, and all present seemed to enjoy the occasion.

On the afternoon of the last day Dr. Loring delivered the annual address. His subject—"Scientific and Practical Agriculture"—was listened to attentively by a large and evidently appreciative audience; and although the address was delivered in the open air, and under rather unfavorable circumstances, still the doctor held the attention of his large audience to the end.

Your delegate has no time to give a detailed account of this fair, enumerate the vast number of articles on exhibition, nor specify every interesting feature of the occasion; but would simply report, that the society, as far as he could judge, is in a prosperous condition, notwithstanding some serious drawbacks it has had to encounter, and if the liberality hitherto shown by the State in its dispensation of bounty shall be continued, it will continue to flourish and exert its wholesome influence on the agricultural interests of Hoosac Valley, and indirectly upon the agricultural interests of the State at large.

To the president and officers of the society I feel indebted for kind attention and courtesy. And especially would I return thanks to the delegate to this Board from that society, and his amiable wife, for their kind hospitality shown me during my sojourn with them.

DANIEL A. CLEVELAND.

NORFOLK.

The nineteenth exhibition of the Norfolk Agricultural Society was held at Dedham on the 19th and 20th days of September. The weather was all that could be desired, the concourse of visitors large, and the proceedings of the fair satisfactory.

The first day was chiefly devoted to the reception and examination of articles by the various committees.

In the department of fruit, this society seems to have taken the lead of most others, to such an extent that it may be said to be its specialty. The display of 1867 was one of the best, and, in many respects, it probably surpassed all previous exhibitions of the society. The tables were, therefore, well filled, the pears alone exceeding three hundred plates, the largest number of varieties being contributed by the president, Hon. Marshall P. Wilder, of Dorchester., while F. & L. Clapp, of Dorchester, Walker & Co., of Roxbury, and Aaron D. Weld, of West

Roxbury, had very large collections, which added much to the completeness and beauty of the show.

Seventy plates of apples also graced the tables, many of the specimens being of the highest excellence, and, considering the character of the season, they were quite remarkable. In this branch of the fair, F. & L. Clapp, of Dorchester, A. F. Stevens, of Wellesley, Albert Crosby, of West Roxbury, and William Chatfield, of Dedham, were the largest exhibitors.

The season having been unfavorable for grapes, the display of this fruit was not large. N. B. White, of South Dedham, made the largest show of natives, though Warren Cobb, of Sharon, J. B. Wetherbee, of Jamaica Plain, and Timothy Phelps, of Dedham, had many fine varieties. J. W. Page, of Jamaica Plain, showed fine samples of the Dorchester seedling blackberry. George E. Leonard, of Foxborough, exhibited a stand from which hung six superb bunches of black Hamburgs and one bunch of the Grizzly Frontignac.

But two plates of peaches were presented: one by N. B. Wilmarth, of South Walpole, the other by George Hewins, of Dedham. Some fine plums were shown from the place of Col. Theodore Lyman, of Brookline.

In the floral display, the department of cut flowers was striking, contributions having been presented by George Craft, of Brookline, Mrs. George Vose, of Milton, Mrs. S. M. Stuart, of Fairmount, and others.

The show of vegetables was highly creditable, the leading contributors being John Sias, of Milton, C. G. Upham, of Needham, John W. Richardson, of Medway, and Nathaniel Smith, of Dedham.

Leaving the hall, which adjoins the grounds, we found the display of stock quite large and creditable. Fine Jerseys from the herd of Edward S. Rand, Jr., of Dedham, M. S. Scudder, of Grantville, and J. W. Wattles, of Canton, added much to the completeness and attractiveness of the show. Some good stock was also shown by Col. E. Stone and J. W. Gay, of Dedham, and Henry Goulding, of Dover.

Of horses, there were thirty-eight entries, the Morgans and the Blackhaws taking the lead. There were many superior animals.

The show of swine, though of limited extent, was of excellent quality, while Dr. Eben Wight, of Dedham, and E. P. Burgess, of the same town, made the best display of poultry, many of the specimens being of remarkable excellence.

Returning to the hall, we found the exhibition of implements the largest and most complete ever made by the society. It included an extensive list of entries by Parker, Gannett & Osgood, the Ames Plow Company, the Morse Plow Company, and others.

Among the mowing machines exhibited, we noticed the celebrated "Buckeye," made at West Fitchburg. This was in the collection of Parker, Gannett & Osgood, the Boston agents of this mower. The character of the manufacturers is a sufficient guarantee that it is made on honor, and it gives such universal satisfaction that it is gratifying to see it constantly improved and made with such faithfulness and care.

The ploughing match was arranged for 2 o'clock, on land of Dr. J. H. Harrington, not far from the society's grounds. There were thirteen entries, of which five were of double teams, four double ox-teams, and four single horse-teams,—each team being required to plough one-eighth of an acre. The work was done in a satisfactory manner by most of them, notwithstanding the rocky character of the soil.

The morning of the second day was devoted to the exhibition of horses on the track, which drew together a large crowd of visitors, and to the annual address and dinner in the hall. A procession was formed at 12 o'clock, under the direction of Col. John W. Thomas, high sheriff of the county, and proceeded to the dining-room in the upper part of the hall, where a bountiful repast was provided under the immediate direction of the officers of the society. After an appropriate address of welcome by the president, Marshall P. Wilder, in the course of which he announced that the society was out of debt, and the invocation of the divine blessing, full justice was done to the collation, when Charles L. Flint, Secretary of the State Board of Agriculture, was introduced to the large audience as the orator of the day. The address was direct, pointed and practical, and was listened to with undivided attention to the end.

Shorter speeches followed, making all the exercises in the highest degree satisfactory.

This society seems to be accomplishing its work successfully. It has manifested great energy in overcoming all obstacles and gaining a reputation, in many respects higher than that of most other societies in the State. Much of this is due to its indefatigable president, and to its accomplished secretary, H. O. Hildreth, Esq., of Dedham. To these officers and to many others we are indebted for kind attentions.

WILLIAM KNOWLTON.

BRISTOL.

Delegated by the State Board of Agriculture to attend the Bristol County Fair, and having been kindly furnished by Mr. Charles Talbot, the secretary, with tickets of admission and time-tables of the railroads, I reached Taunton on the morning of October 1st, the first day of the fair.

I had no difficulty in finding the grounds, as the weather was fine and everybody was going, so I had only to follow the crowd. I found the entrance lined by a beautiful grove which, though containing some underbrush and a surface somewhat uneven, afforded a fine shade for horses. With a moderate sum expended in clearing up, grading and providing seats at suitable places, this part of the inclosure might be made more useful and attractive.

I soon recognized Mr. A. P. Slade, of the State Board, and acting president in absence of Mr. Ames, who, together with Mr. William P. Hood, of the committee of arrangements, accompanied me to witness the ploughing match. There was a goodly number of competitors for premiums, and the work was well done with Mead's conical plough, which was the only one used in the trial, I think. We were pleased to see such an interest manifested in the ploughing by the farmers; for although it occurred in the early part of the day, there was a large gathering present to witness the trial. We were also pleased to see that in most instances the farmers or their sons were holding the plough instead of a foreign laborer, not forgetting Franklin's adage, that

"He that by the plough would thrive,
Himself must either hold, or drive."

The skilful guiding of the plough should be considered as valuable an accomplishment to the practical farmer as producing a two-forty gait from a worthless nag. A ploughing-match should be included in the programme of every agricultural fair.

The exhibition of town teams on the track consisted of eighty-four yoke,—thirty-three from Taunton, twenty-three from Norton, sixteen from Raynham, and twelve from Rehoboth. They were preceded by the band, and made a very fine display. Most of these were native, and were not, as a whole, of a superior quality. There were, however, a few very fine yokes of thoroughbreds.

There was in the pens a good show of stock. The yoke of cattle exhibited by Mr. Jonathan Slade, of Somerset, weighing fifty-three hundred pounds, attracted much attention. There was also on the grounds from the State Lunatic Asylum, a fine yoke of fat cattle, one of which dressed, on the first of this month, two thousand and four pounds.

Of cows and bulls there was not a large number of entries when compared with other divisions; but some good specimens of the Alderney, and also of the Ayrshire cattle, which seemed to be the favorite breeds.

There was a good exhibition of coarse-wool sheep, but I was surprised not to see a fine-wool sheep on the grounds, and still more so when informed that there was not a hundred in the county.

There was the longest row of poultry cages we ever saw at any fair, and it attracted a crowd of bird-fanciers, who engaged in animated discussions upon the relative merits of the different families.

There was also a good exhibition of swine.

Of the horses and the trotting we will not attempt a description, as we are not accounted a good judge of horse-flesh; but we do not wish it understood that they have no fine horses or fast trotting in Bristol, for an examination of the programme will satisfy those who wish to see what Josh Billings denominates a "purely agricultural horse trot," that by attending the Taunton show they can be treated to that kind of amusement at all hours, like the hungry public with meals at the village restaurant.

There was a good collection of agricultural implements in the lower story of the hall. This is a department not generally appreciated by the farmers, and, in many of our fairs, consists of some half a dozen articles, which are frequently crowded in some corner by the managers, or disposed of in some out-of-the-way place, where they are scarcely noticed.

The exhibition of heavy manufactures, for which this society is notorious, we were informed was not as good as in former years; but we think it would have been hard to beat this year. The finely polished and beautiful parts of a locomotive, by Mr. William Mason, of Taunton, and also the case of silver ware, attracted and deserved much attention.

Among the vegetables, the collection of one hundred and seventy-three varieties of Mr. Charles Albro, of Taunton, was conspicuous.

The divisions above noticed, together with the household manufactures, works of art, flowers, fancy articles contributed by the ladies, and that of bread, butter, cheese and honey, (of which there was one thousand pounds,) and the best collection of fruit we ever saw, well filled the second story of the hall,—100 by 160 feet,—and could not possibly have been placed in an ordinary sized hall.

The society have expended, the past year, in building a large and commodious barn, purchasing 12 acres of land adjoining their grounds, and other improvements, about five thousand dollars. They now have sixty-three acres, on a part of which a fine opportunity is presented for experiments in draining and other improvements.

We were pleased with the interest manifested by the managers, the clock-like manner in which the arrangements were carried out, and the general order which prevailed. During the two days that we attended, we did not see a single person intoxicated, and scarcely heard an oath. We hope the delegate next year will be able to say the same.

We cannot close our Report without noticing the annual dinner, which was served on the second day in the third story of the hall, which

is commodiously arranged, and devoted exclusively to that purpose. The farmers of Bristol, with their wives and daughters, seated at seven hundred feet of table, was really the best exhibition at the fair, and must be seen to be appreciated. After all had been supplied, Dr. Loring delivered an excellent address.

After taking a view of the people,—which were estimated at fourteen thousand,—from the window of the hall, we wended our way to the depot, fully believing that the Bristol show is what its officers claim it to be—one of the best exhibitions in the State.

We were obliged to leave at the close of the second day, and cannot report the proceedings of the third. We are informed that the receipts of the society were nearly \$8,000.

Every attention was rendered by the officers of the society to render our visit agreeable, and we shall always remember our trip to Taunton with pleasure.

JOHN L. COLE.

BRISTOL CENTRAL.

The eighth anniversary of the Bristol County Central Agricultural Society was held at Myrick's September 19, 20 and 21, under a favorable sky, abundance to be seen, and a jolly crowd assembled.

Agreeably to appointment your delegate was early upon the grounds, where he soon met the good-natured smile of the president, making all happy about him.

This being the first report that has been presented this department from the Bristol Central Society, it will be proper for me to state, that although the society has been in successful operation for the last eight years, it has never before received the State bounty or a visitor from the State Board, but has, by its own independent action, succeeded in placing its annual exhibition among the most prominent in the State.

The site selected is beautiful, and well adapted for the purpose required, with a substantial fence inclosing about forty acres, upon which is erected their magnificent hall, one hundred and fifty feet long and fifty wide, two stories high, with an ell part attached, the granite structure of which indicates most decidedly the permanent design of the founders of the institution. The stables are numerous and commodious, built partly of stone, furnishing comfortable quarters for the horse, with a passable chance for the jockey and worshipful owner. The trotting course is all that could be desired for the exhibition of the horse.

I learned indirectly that the whole was bought and constructed at an expense of about twenty thousand dollars, drawn from the deep pocket

of their president, which sum the society has continued from year to year to refund, and now have only five or six thousand remaining unpaid. The noble principle of generosity and persevering determination that knows no motto but success, has placed this society upon the permanent basis on which it is now represented.

My attention was first given to the thousand and one articles on exhibition in the hall, which, being large, gave abundant room for the many varieties of the useful, curious and ornamental,—among which could be found the most approved patterns of ploughs, mowing-machines, horse-rakes, carriages, &c.; the various productions of the different manufacturing companies in that section, iron, cotton and wool; the products of the field and garden, bread, butter, cheese, honey, vegetables, fruit and flowers,—all occupying the place assigned, doing credit to the producer and honor to the exhibition.

The ladies contributed many specimens of household manufacture,—painting, drawing, needle, wax, cone and shell work, &c.,—which were admired by all that passed that way. And a greater contribution still was their glorious presence, crowned with smiles of encouragement.

The exhibition of cattle was large, especially of oxen. The best working cattle upon the ground were grade Devons. I am sorry to note that there seems to have been a want of interest in this department in former years, as much the largest portion was native stock, or slightly mixed with the improved breeds of the present day. I noticed, however, the march of improvement had already begun. Among the younger stock could be seen good specimens of the more popular breeds, which will, ere long, change and improve the whole.

The show of swine was really enormous, and poultry the best I ever saw, while sheep were scarcely represented at all, leaving a wide margin for improvement.

The horse seems to be a great pet in Bristol County. I think some class was on exhibition constantly during the three days' fair, and am able to report a very fine show of the most fascinating animal upon earth—the horse. My attention was called to several popular stallions, and stylish breeding mares with genteel stepping colts of different ages by their sides; also, the heavy draught horse, the walking horse, the fast trotter and racer,—all having their admirers about them. The raising of good horses should be encouraged, as no civilized community can do without them, and this must ever be one of the most important branches of farming. Speaking of good horses, I mean such as can be made useful, possessing a suitable combination of strength, speed and endurance.

At two o'clock, on Friday, an hour was occupied by the speakers of the day. Governor Bullock told us that agriculture needed special encouragement. President Clark told us of an agricultural college, and prom-

ised to educate our sons that they might be farmers. Hon. Mr. Eliot spoke of the dark past and the bright future. Dr. Loring spoke of the rapid progress of agriculture. As an illustration, he told us that when the prophet Elisha was called to the Lord he was found ploughing with twelve yoke of oxen. "No wonder," he said, "that he quit farming and went to prophesying, if it took twelve yoke of oxen to draw the ploughs of those days."

In general terms, I can state that progress is the motto here. Where squashes are produced that weigh 175 pounds; where hogs weigh 1,000 and steers 5,300; where 120 yoke of oxen are upon the grounds at once; where the Devon, Ayrshire, Shorthorn and Jerseys are taking the place of the sharp, thin, slab-sided cattle of other days; where horses want only two minutes and twenty-six seconds to trot a mile; where from two to four thousand people assemble daily; where such men as Nathan Durfee are elected for president; where Bullock, Clark, Eliot and Loring come to visit the exhibition and address a fitting assembly, I may as well state such an exhibition was a success, and its officers and members may be proud of what they have already accomplished.

In closing I wish to express my thanks to families whose generous hospitality your delegate enjoyed.

M. F. WATKINS.

PLYMOUTH.

As delegate from the Board of Agriculture, I attended the annual exhibition of the Plymouth County Agricultural Society, held at Bridgewater, on Thursday, Friday and Saturday, September 26, 27 and 28. I was present on the morning of the first day, and remained till the afternoon of the second.

This society have very ample accommodations for holding their fairs, having a lot of land containing nearly seventy acres, with a spacious hall upon an elevated portion of the inclosure, which overlooks almost the entire grounds. The hall is two stories high. The lower one is used for the exhibition of the products of the farm and garden; also the handiwork of the ladies, the skill of the mechanic and manufacturer. The display of butter and single dairy cheese was very fine. The rich, golden butter I think was as handsome as I ever saw.

There was a very large display of bread,—showing the skill of the ladies, and the interest they take in this part of the exhibition, which is very commendable. Without good bread and butter for our tables, other food would seem hardly palatable. The display of fruit was not large; but judging from the looks, the quality must have been

good. The apple crop suffered perhaps more in the eastern, than middle and western sections of the State. The display of flowers was fine, and attracted much attention from the numerous visitors who thronged the hall. The display of inventions, agricultural implements, and manufactures was not large, although the general appearance of this part of the exhibition was good, and worthy the efforts of this or any other agricultural society.

First in the programme outside the hall was the ploughing match, which was contested by ten teams:—seven pairs of oxen, two pairs of horses, and one three horse team. The land selected for the trial was low and rather wet, with a turf not very strong, which required more care and skill of the ploughman to lay the furrows handsomely. It, however, was all so well done, that it seemed to me that the committee who had charge of this department must possess wonderful powers of discrimination to be able to decide who should be first and who second, until they should complete the list of awards. There were eight premiums, leaving two teams to try their skill at the next fair.

I next proceeded to the stock pens, where in cattle I found the Jersey largely to predominate. In sheep, Oxford and Southdowns with a few Leicesters. In the department of swine there were all ages and conditions, from those of mature years to those whose first breath was drawn upon the society's grounds. They were chiefly of the Chester County breed. The number of cattle on the ground was not far from one hundred. A large proportion of them were dairy and breeding animals. I have spoken of the Jersey as predominating. These are not so symmetrical in form or gigantic in proportions as the Shorthorns of the Connecticut Valley and many other portions of the State. But when I heard the reports of the richness of the milk, and saw the golden butter in the hall, I was led to believe that the Jersey stock was by no means to be despised.

The exhibition of horses received its due share of attention. Some splendid matched and single horses were put on the track. The society have a splendid place for showing their horses, and it is evident that this animal is by no means neglected in this part of the State.

In the department of poultry there was a large exhibition, larger I think than I have seen at any other fair. There were the large Brahmas, Dorking, Black Spanish, and other varieties down to the Bantams, which, although of small proportions, seemed to say by their shrill notes that they were worthy of our especial attention.

At twelve o'clock the second day, the officers, members of the society and others, were marshalled in procession and marched to the hall, where a sumptuous dinner had been prepared for the occasion. After discussing the viands of the table for half an hour, the attention

of the assembly was called to brief addresses by the president of the society and others. During the continuance of the fair, the Society held their annual meeting; and after electing their officers, voted unanimously to appropriate \$200 annually for the establishment of scholarships in the agricultural college. The reports of the society showed that their receipts last year for entrance fees and at the hall amounted to over \$4,500, and that the ground rents for tents were over \$1,000.

It was estimated that there were not less than eight thousand on the ground the second day of the show this year, which showed the interest people in that section of the State take in cattle shows.

I understood that on Saturday there was to be a farmers' meeting for the discussion of various subjects pertaining to practical agriculture, or any subject connected with the interests of the society; but as I left the evening previous, can give no account of their meeting, but must rest satisfied with this hasty sketch of what I saw and heard while in Bridgewater.

N. S. HUBBARD.

BARNSTABLE.

It was my privilege as a delegate from this Board to visit the annual exhibition of the Barnstable Society. It gave me the greater pleasure to visit that county, and attend their fair, because it was the birthplace of my parents, on both sides, and having a desire to compare notes with the Cape farmers and observe the interest taken in agricultural pursuits at the east. The days of the fair were unusually fine for the season, and everything was favorable for the exhibition. At the starting point I tried to keep in mind that farming is not the principal business of the men of that county, therefore I must not expect too much from them in their operations upon the land. The exhibition of cattle on the grounds was not large, but in most instances of very good quality and of good growth; and yet a breeder of Shorthorns might have thought the stock in most instances small, compared with his own. Having spent two days visiting different parts of that section, I was fully prepared in my own mind to witness a small exhibition of working oxen, and found but four or five pairs upon the ground, where in Berkshire County, oxen being extensively used, we might expect a larger exhibition of that class. Some fine cows and bulls, mostly grades, were upon the ground, and also some fine sheep and swine.

It was not my privilege to observe the ploughing match, not having been notified at what hour it would take place. Only one team entered

for competition. After the work had been done, I visited the ground ploughed, and found it well done in all respects. I now enter the hall and find one of the best exhibitions of fruit and vegetables I ever witnessed. The variety of Porter apples exhibited, exceeded anything I ever saw. I noticed some sweet potatoes raised there, which would compare with any Delawares or Carolinas. The ladies evidently intended to sustain their part in the hall exhibition. The needle-work and also artificial flowers furnished by them, served to interest the eyes of all beholders.

The dairy department was also well sustained, both in the exhibition of cheese and butter, and in fine, in all the departments in the hall a well cultivated taste and a well directed effort has made the ladies' department a perfect success.

I now come to the last part of the programme, yet not the least interesting. I allude to the custom of the members meeting in this upper hall, with their wives and children, to surround the tables loaded with the substantial and inviting viands and luxuries to refresh the inner man.

This was the pleasantest feature your delegate ever noticed at any of our fairs. I think one of the greatest blessings arising from our societies is derived from the social influences which ought to be felt in thus mingling together. Let us as men renew our acquaintance with each other, from time to time, exchanging thoughts also upon the interests of agriculture, and give and receive such information as we may have gathered since the last annual festival. But let us never forget that our ladies are entitled to the same privileges of social life and festive gatherings, that we of sterner natures feel the necessity of, for our own good. After the dinner was over, the annual address was delivered by the Rev. James F. Clarke, of Boston. It was an interesting, able and instructive discourse, and listened to with marked attention by his audience. After the address proper, the Hon. T. D. Eliot, M. C., and others, followed in short speeches, thus closing the exercises of the day.

In the evening, as is the usual custom, a large company gathered to spend a *short time* and perhaps longer, in the pleasures of the dance. But as your delegate did not receive an early education in that art, he did not feel at liberty to engage with the merry party, lest he might prove a stumbling block in the way of enjoyment; and yet your delegate enjoyed the sight of such a party as well as could be expected by one not instructed in that accomplishment. I have but to return my thanks to our associate, George A. King, and to the president, N. Hinckley, Esq., for their kindness to me while I remained with them.

T. D. THATCHER.

NANTUCKET.

The twelfth annual exhibition of the Nantucket Agricultural Society was held on the grounds of the society on the 25th and 26th days of September; and notwithstanding the forbidding appearance of the weather in the morning, the Nantucketers, who are accustomed to wet, being entirely surrounded by water, failed not to appear in good time and in good numbers to enter into the toils and festivities of the occasion.

A spirit of laudable ambition was brought to the fair in the hearts of those who had long anticipated the day when each would vie with his neighbor and rejoice the heart of his companion.

The clouds passed away, and left the afterpart of each day joyous in the rays of the great luminary, and the faces of those present beaming with delight and in thanksgiving to Him who rules the destinies of man, that He had vouchsafed to them the clear air and the refreshing breeze, which gave to all surrounding objects a beauty which they had feared would appear in but simple deformity.

The occasion was honored by the presence not only of the dwellers on the island, but by a goodly number from various sections, whose presence added to the pleasures of the day. That strangers should be attracted to this place, is not to be wondered at, when we consider the many beauties it is capable of introducing to the eye and to the understanding.

The cattle presented for exhibition discovered a laudable enterprise in the farmers of Nantucket. But few animals were on exhibition that would not grace the pens at any county show. Most of the superior stock was of the Alderney and Ayrshire breeds, which seem to be better adapted to that locality than are the Durhams. There were some very fine specimens of Ayrshires exhibited by Manuel Enas and A. M. Myrick. Superior Alderney stock was exhibited by James Thompson, Esq., president of the society, and by A. Franklin and Edward Hammond.

The enterprise of these gentlemen in the way of stock-breeding is doing much to benefit that society, and through it the community at large.

It is difficult often for us to break away from our own old habits, or to get out of the track trod by our fathers. This may be a reason why so few of our worthy agriculturists do not enter more readily into the improvement of their herds of cattle. The cost of keeping the improved and approved breeds is no more than that of the less approved. When every farmer shall have looked to his own interest in this matter, we shall find our pastures covered with better stock, and our stalls filled

with that wherein lies the stock-breeder's pride—sleek, handsome, productive animals.

I would by no means be thought to speak lightly of grade stock. I admire such—the higher the grade the better ; but of none do I think so highly as I do of the thoroughbred.

Many fine grade animals were on exhibition—animals that the owners may take pride in ; but that pride cannot well compete with the pride of the thorough-breeder.

Attention was drawn to three native buffaloes offered on exhibition, one six and two eight years old. With what success and with what profit these animals can be reared on the island I am not able to report.

This island seems to be capable of producing fruits, not only of the animal and vegetable kingdoms, but a multiplied variety of handiwork, as was manifest by the exhibition of fancy articles by the ladies, all very good, much of it very creditable to the milder sex and better *half* of creation.

There seemed to be no lack of skill in the various arts. In the hall of exhibition were eel-spears and photographs, rattan baskets and huckleberries, miniatures on porcelain and seives, and a great variety of useful as well as ornamental articles.

This society, as well as some other societies in the State, offers premiums on reports—for the best report. This practice will tend to elevate the mental capacity of the society in the estimation of the public.

One great failure in those who write reports awarding the premiums offered by agricultural societies, is they fail to report anything but the award. They do not give the reason for the award, which the public is justly entitled to. Perhaps they cannot do this, for the fact that the competitor himself fails to give the facts that are important for the reporter to know before he reports. All the facts that are important in the case should be placed in the hands of the committee by the competitor.

Such as the following is often the case : “ To B we award the first premium for the best fat cow, \$3 ; for the best fat hog, \$4.”

These seven dollars which are awarded to B, did once belong to the State, and were given to the agricultural society that it might in return benefit the public. The society has given them to B because he had the best fat cow and the best fat hog. How is the public benefited by these facts ? The important facts are yet behind the curtain. The public want to know—the State is entitled to know—what B has done, and how long he has been doing what he has done, to entitle him to these seven dollars.

The general features connected with the exhibition at Nantucket, were highly commendable. They have ample grounds and a good track, and on this occasion it was sacred to worth and merit.

Scrubs, old pelters and useless animals were not there. The family horse, the farm horse, the good trotter, the saddle horse, the fast walker, and the horse for all work were there. For general purposes, the horse perhaps, of all animals, stands in the first rank. He is an animal that no class in society can well do without. He is used in the ordinary service, and may be in all the service on the farm.

He is used by the man of business and the man of pleasure. Like other beasts, he was given for man's use, not for his abuse. The fact however cannot be denied, that through man's impetuosity, he is often made to suffer.

It is very desirable that more attention should be given to the breeding of horses. The horse for all work is what we most need—the good roadster is strongly desired, while the race-horse, fit only for the turf, does not come within the catalogue of our necessities. Yet the ambition of many is to urge this class of horses into the foremost position of some of our agricultural exhibitions, to the detriment of other animals of use to the farmer. The only race that was run at the Nantucket exhibition, was by three pedestrian competitors, on the half mile track. The first prize of \$3 was won by Alvin Hull, of Nantucket, time $2\frac{4}{5}$ minutes.

The second prize of \$2, was won by William Eaton, of Sandwich. The novelty of this part of the exhibition caused some excitement for the moment.

The plough was but little used. Only two entries for oxen, and one entry for horses, were made, all of which competed for the prize, and each gained it, though not the first prize.

The display of fruit was very commendable, considering the season. Pears were offered by Henry Coffin, and Samuel King, twenty-three varieties each. James Thompson offered sixteen varieties, and E. H. Alley offered fifteen varieties. Fine specimens of the pear were offered by various other individuals.

Apples of different kinds and grapes of various hue and cluster, the flavor of which in connection with that of the quince and the peach (all of which were truly good specimens,) filled the air with a perfume that drew the multitude together, and so did the Nantucket glee club, which made the air to ring with strains most charming.

To be particular to notice everything that was exhibited, will require more time than will be profitable to spend at the present time, but we must be allowed to say, that the bread and butter commended not only themselves, but those who made them, to the favorable consideration of all who may chance to seek such skilful hands.

The farmers' holiday being past for the season, it is natural and profitable to look back to the occasion and ask ourselves what all this has

profited us. No reflecting, unbiased mind can ponder the scenes through which we have passed, without gathering some ideas that will be useful to him.

Not only have there been trials of skill and trials of strength exhibited, but man's inventive genius has been brought to the test. It is impossible for a man of inquiring mind to have viewed all that has passed before him without in some way being profited,—without adding something to the amount of his knowledge, however great that knowledge may have been.

These are occasions on which comparisons are made, and with a small degree, even, of emulation, a man will imbibe some new idea that will occupy his mind during his leisure moments.

From thence arise the good fruits of these exhibitions, and he is a dolt who will not partake of them.

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RETURNS
OF
AGRICULTURAL SOCIETIES,
FOR 1867.

FINANCES.

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APPENDIX.

SOCIETIES.	Amount received from the Commonwealth.	Income from permanent fund.	New members & donations.	All other sources.	Receipts for the year.	Premiums offered.	Premiums and gratuities paid.	Current expenses for the year—not including premiums and gratuities.	Disbursements for the year.	Indebtedness.	Value of real estate.	Value of personal property.	Permanent fund.
Massachusetts,	-	\$4,102 08	-	\$2,136 35	\$6,238 43	\$1,450 00	\$748 00	\$5,496 14	\$6,324 14	-	-	\$55,223 92	\$55,223 92
Essex,	\$600 00	828 30	\$312 00	1,936 42	3,676 72	2,079 00	867 20	1,803 69	2,760 84	-	\$6,000 00	11,524 58	17,524 58
Middlesex,	600 00	51 87	1,113 00	2,945 24	4,710 11	1,198 00	881 50	1,466 71	2,290 54	-	8,000 00	1,000 00	9,000 00
Middlesex North,	600 00	-	202 50	3,699 20	4,501 70	860 00	528 75	1,164 75	3,388 05	\$1,800 00	7,098 24	805 69	7,903 93
Middlesex South,	600 00	-	83 07	1,139 94	1,823 01	1,067 00	507 62	677 08	2,463 77	2,340 76	9,300 00	1,100 00	10,400 00
Worcester,	600 00	-	600 00	3,931 52	5,131 52	1,537 25	1,517 75	1,262 26	4,329 23	3,500 00	22,000 00	500 00	15,000 00
Worcester West,	600 00	188 00	51 00	3,064 45	3,893 45	1,303 00	1,022 00	1,552 67	3,286 17	5,760 00	14,350 00	1,127 45	8,590 00
Worcester North,	600 00	288 03	2,402 50	2,880 73	6,171 26	1,706 75	1,051 87	2,143 86	11,487 06	-	8,730 00	270 00	9,000 00
Worcester N. West,	-	32 16	245 25	158 63	393 88	143 00	77 33	161 87	239 20	-	-	300 00	1,093 70
Worcester South,	600 00	296 08	83 00	142 00	1,123 08	945 00	655 70	527 36	1,183 06	-	2,300 00	2,113 58	3,532 00
Worcester So. East,	600 00	-	86 00	3,078 09	3,664 09	1,231 25	726 22	1,113 17	-	4,500 00	8,000 00	589 80	3,500 00
Hampshire, Hampden & Franklin,	600 00	148 00	237 00	1,568 90	2,553 90	966 50	827 00	1,240 48	2,840 10	3,060 00	8,000 00	5,000 00	4,000 00
Hampshire,	600 00	563 56	67 50	578 46	1,844 52	1,087 00	852 02	883 54	1,735 56	-	5,500 00	550 00	6,050 00
Highland,	600 00	79 74	40 00	533 82	1,254 56	752 50	447 00	731 06	1,178 06	-	3,000 00	1,800 00	4,800 00
Hampden,	600 00	-	62 50	15,388 05	16,050 55	1,893 50	712 50	16,834 05	17,546 55	19,600 00	35,000 00	350 00	26,600 00
Hampden East,	600 00	125 00	118 00	167 00	1,020 00	960 00	458 00	133 37	591 37	970 00	6,000 00	250 00	4,500 00
Union,	-	-	-	-	62 90	18 00	18 00	26 25	43 25	500 00	1,000 00	1,000 00	1,509 65

APPENDIX.

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Franklin, . . .	\$600 00	\$200 00	\$228 75	\$1,149 36	\$2,008 13	\$1,106 50	\$738 26	\$1,044 10	\$1,782 35	-	\$7,000 00	\$1,000 00	\$3,000 00
Housatonic, . .	600 00	-	261 68	3,776 23	4,637 91	2,275 00	1,806 00	2,504 63	4,477 95	-	9,000 00	75 00	24,000 00
Berkshire, . .	600 00	600 00	900 00	2,238 51	3,635 51	2,300 00	2,024 50	1,478 28	3,492 78	-	10,000 00	2,500 00	10,000 00
Hudson Valley, .	600 00	150 00	428 00	1,421 63	2,599 63	1,472 50	1,187 00	4,134 96	5,320 06	\$4,485 00	8,000 00	200 00	3,515 00
Norfolk, . . .	600 00	-	353 00	2,781 02	3,734 02	1,728 75	918 55	2,783 13	3,701 68	-	10,414 00	250 00	10,414 00
Bristol, . . .	600 00	-	2,458 00	7,216 00	10,274 00	1,750 00	1,355 50	5,016 84	6,272 34	9,458 00	30,822 51	4,914 53	20,779 04
Bristol Central, .	600 00	-	163 00	4,378 94	5,141 94	1,467 75	1,850 50	2,508 28	4,458 78	5,261 14	17,627 87	1,000 00	13,366 73
Plymouth, . .	600 00	200 14	449 00	7,096 26	8,344 40	2,470 50	1,902 78	1,568 54	8,777 09	-	22,000 00	1,000 00	23,000 00
Marshfield, . .	-	-	600 00	1,194 13	1,784 13	261 50	212 25	691 72	1,529 00	30 00	1,731 78	578 07	2,101 33
Hingham, . . .	-	-	-	-	29,432 17	1,143 26	-	1,214 83	25,180 97	4,000 00	21,406 15	3,036 00	17,406 15
Barnstable, . .	600 00	40 00	30 00	808 40	1,438 40	700 00	424 61	2,015 87	1,440 48	892 08	6,000 00	300 00	6,000 00
Nantucket, . .	600 00	171 46	22 00	348 57	1,142 03	906 26	506 75	734 28	1,241 08	-	3,400 00	767 92	3,978 92
Martha's Vineyard, .	600 00	546 50	238 65	170 02	1,577 17	648 50	610 27	1,041 98	1,668 25	250 00	3,400 00	2,575 46	5,975 46
Totals, . . .	\$15,000 00	\$8,463 92	\$11,145 40	\$75,921 89	\$136,712 92	\$37,527 26	\$25,325 42	\$63,435 65	\$123,019 21	\$66,306 98	\$292,089 55	\$101,802 00	\$342,282 41

PERMANENT FUND—HOW INVESTED.

MASSACHUSETTS.—In bank stock, Insurance Co., and U. S. and Boston bonds.

ESSEX.—In bank stock and railroad bonds.

Personal property.
Personal property.
and fixtures.

Notes and cash.

and loan on security.

Notes and mortgages on real estate.

Gold, and members' notes.

Expenses and fixtures.

Expenses.

Expenses from members.

Expenses.

Expenses.

Expenses notes.

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.

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APPENDIX.

FOR FARMS, FARM IMPROVEMENTS, MANURES, &c.

SOCIETIES.	For manure of farms.	For draining.	For subsoiling	For ploughing at the exhibition.	Total amount of farms improved.	Total amt't award- ed for farm improvements.	Total amt't actu- ally paid for farms improve- ments.
Massachusetts,	-	-	-	\$156 00	\$305 00	\$201 00	\$201 00
Essex,	\$30 00	-	-	63 00	238 00	114 00	114 00
Middlesex, . . .	-	-	-	27 00	64 00	32 35	12 00
Middlesex North, .	-	-	-	37 00	229 00	67 00	63 00
Middlesex South, .	-	-	-	64 00	74 00	64 00	64 00
Worcester, . . .	-	-	-	45 00	110 00	45 00	45 00
Worcester West, .	-	-	-	39 00	144 00	64 00	64 00
Worcester North, .	25 00	-	-	-	-	-	-
Worcester North-West,	-	-	-	54 00	102 25	71 50	71 50
Worcester South, .	-	-	-	104 00	212 00	128 00	124 00
Worcester South-East,	-	-	-	-	43 00	3 00	3 00
Hamps. Franklin & Hampd.,	-	\$20 00	-	-	137 00	111 50	21 50
Hampshire, . . .	-	-	-	-	33 00	4 50	4 50
Highland, . . .	-	-	-	10 00	131 00	30 00	17 00
Hampden, . . .	-	-	-	-	-	-	-

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Hampden East,	\$19 00	-	-	-	-	\$6 00	-	-	\$167 00	\$25 00	\$25 00
Union,	-	-	-	-	-	-	-	-	-	-	-
Franklin,	-	-	-	-	-	-	-	-	53 00	-	-
Housatonic,	46 00	\$5 00	-	-	-	-	\$5 00	-	115 00	56 00	56 00
Berkshire,	.	.	.	.	46 00	10 00	-	-	-	-	36 00	-	142 00	142 00	142 00
Housac Valley,	.	.	.	.	-	12 00	-	-	-	15 00	-	\$14 00	66 00	49 00	40 00
Norfolk,	.	.	.	.	84 00	-	-	-	-	-	-	-	364 00	84 00	98 00
Bristol,	.	.	.	.	90 00	-	-	-	-	20 00	-	-	324 00	110 00	110 00
Bristol Central,	.	.	.	.	48 00	-	-	-	-	-	8 75	-	230 00	66 75	66 75
Plymouth,	.	.	.	.	47 50	-	-	-	-	-	30 00	-	186 00	76 50	76 50
Marshfield,	.	.	.	.	14 00	-	-	-	-	-	8 25	-	-	-	-
Hingham,	.	.	.	.	25 00	-	-	-	-	-	8 00	-	132 16	37 00	-
Barnstable,	.	.	.	.	6 00	-	-	-	-	23 00	-	-	132 00	18 00	18 00
Nantucket,	.	.	.	.	9 00	-	-	\$8 00	-	-	-	-	68 00	45 00	45 00
Martha's Vineyard,	.	.	.	.	14 50	-	-	-	-	-	9 40	5 00	70 00	28 90	28 90
Totals,	.	.	.	.	\$1,033 00	\$53 00	\$8 00	\$9 00	-	\$30 00	\$108 00	\$107 40	\$3,572 41	\$1,552 90	\$1,500 65

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.—Continued.

FOR FARM STOCK.

SOCIETIES.	For Bulls.	For Milch Cows.	For Heifers.	For Calves.	For Working Oxen.	For Steers.	For Fat Cattle.	For Horses.	For Sheep.]	For Swine.	For Poultry.	All other stock.	Total amount offered for Live Stock.	Total amount awarded for Live Stock.	Total amount paid out for Live Stock.
Massachusetts,	-	-	-	-	-	-	-	\$595 00	-	-	-	-	-	-	-
Essex, . . .	\$15 00	\$40 00	\$29 00	\$6 00	\$30 00	\$12 00	\$23 00	118 00	\$14 00	\$21 00	\$15 00	-	\$493 00	\$323 00	\$312 00
Middlesex, . . .	20 00	87 00	12 00	5 00	28 00	-	21 00	131 00	6 00	56 00	18 00	\$55 00*	507 00	439 00	439 00
Middlesex North, . . .	35 00	73 00	26 00	-	38 00	20 00	6 00	54 00	27 00	26 00	18 50	3 00	406 00	228 50	132 00
Middlesex South, . . .	21 00	18 00	34 00	10 10	11 00	7 00	5 00	101 00	18 00	37 00	36 00	25 00	418 00	323 00	226 75
Worcester, . . .	92 00	155 00	87 00	16 00	59 00	59 00	24 00	608 00	26 00	37 00	21 00	40 00	1,285 00	1,224 00	1,224 00
Worcester West, . . .	46 00	56 00	21 00	17 00	34 00	30 00	42 00	494 00	16 00	31 00	6 50	87 00	996 00	868 50	803 50
Worcester North, . . .	32 00	59 00	40 00	63 00	38 00	39 00	41 00	229 00	26 00	27 00	14 00	-	815 00	608 00	588 00
Worcester North-West,	4 00	4 00	2 00	2 00	3 00	7 00	6 00	24 00	5 00	-	2 00	15 00†	81 00	74 00	47 67
Worcester South, . . .	30 00	33 00	26 00	19 00	54 00	37 00	15 00	63 00	31 50	25 00	6 00	36 00	490 50	385 50	385 50
Worcester South-East,	39 00	40 00	32 00	-	28 00	22 00	12 00	110 00	9 00	42 00	7 50	-	417 00	341 50	272 50
Hampshire, Franklin & Hampden, . . .	51 00	21 00	19 00	22 00	44 00	25 00	62 00	248 00	41 00	16 00	8 00	172 00	729 00	764 00	631 93
Hampshire, . . .	28 00	12 00	10 00	11 00	110 00	15 00	35 00	342 00	23 00	21 00	9 50	20 00	560 00	636 50	514 50
Highland, . . .	17 00	3 00	12 00	4 50	23 00	19 00	26 00	112 00	52 00	8 50	-	-	449 25	208 50	208 50

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	\$64 00	\$21 00	\$51 00	-	\$20 00	\$34 00	\$30 00	\$322 00	\$17 00	\$19 00	\$4 50	\$77 00	\$1,026 00	\$608 50	\$650 00
Hampden, . . .	31 00	10 00	12 00	\$5 00	19 00	22 00	14 00	87 00	13 00	14 00	4 75	38 00	377 50	278 75	278 75
Hampden East, . . .	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Union, . . .	72 00	57 00	11 00	10 00	40 00	44 00	20 00	177 00	102 00	25 00	5 00	61 00	740 50	624 00	678 25
Franklin, . . .	43 00	71 00	35 00	10 00	63 00	45 00	28 00	568 00	80 00	83 00	27 00	32 00	1,006 00	1,006 00	1,406 00
Houstonic, . . .	42 00	78 00	45 00	12 00	55 00	32 00	14 00	301 00	128 00	46 00	43 00	60 00	1,011 00	865 00	865 00
Berkshire, . . .	24 00	33 00	15 00	6 00	24 00	3 00	17 00	163 00	70 00	13 00	23 00	-	568 00	301 00	300 00
Hoosac Valley, . . .	34 00	65 00	18 00	-	16 50	-	-	163 00	5 00	24 00	20 00	-	808 00	845 80	272 00
Norfolk, . . .	58 00	32 00	33 00	4 00	132 50	33 00	51 50	134 00	23 00	33 00	32 75	-	516 00	571 25	571 25
Bristol, . . .	50 00	36 00	15 00	5 00	126 00	4 60	33 00	149 00	35 00	45 00	47 50	37 00	803 00	1,482 50	1,482 50
Bristol Central, . . .	46 00	94 90	40 90	30 25	33 80	30 00	61 16	725 50	54 00	49 00	64 00	-	1,407 00	1,241 66	1,241 66
Plymouth, . . .	5 00	5 00	9 00	3 00	10 00	5 00	11 00	12 00	5 00	8 00	5 00	-	86 00	84 00	84 00
Marshfield, . . .	29 00	72 00	-	17 50	19 75	-	47 25	43 00	80 00	95 50	27 25	-	502 25	436 25	-
Hingham, . . .	15 00	12 00	10 00	6 00	18 00	6 00	35 00	41 20	20 00	20 00	15 00	-	303 00	106 20	106 20
Barnstable, . . .	22 00	67 50	-	-	14 50	-	10 00	125 00	15 00	14 00	10 00	-	482 00	578 00	278 00
Nantucket, . . .	35 00	38 00	33 00	5 50	18 00	-	29 00	53 75	39 00	13 00	7 00	6 00	203 50	267 25	257 25
Martha's Vineyard, . . .															
Totals, . . .	\$1,010 00	\$1,503 46	\$678 96	\$338 88	\$1,129 35	\$540 00	\$697 41	\$3,222 00	\$1,026 00	\$1,026 00	\$1,026 00	\$773 00	\$17,163 50	\$15,545 16	\$13,923 71

* Herds of Cattle.

† Town Teams.

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.—Continued.

FOR FARM PRODUCTS.

SOCIETIES.	Indian Corn.	Wheat.	Rye.	Barley.	Oats.	Beans.	Grass Crops.	Grass Seeds.	Potatoes.	Carrots.	Beets.	Parsnips.	English Turnips.	Butter-Beans.	Onions.	Other Root Crops.
Massachusetts,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Essex,	\$10 00	-	-	-	\$8 00	-	-	-	-	-	-	-	-	-	-	-
Middlesex,	3 00	\$3 00	\$1 00	-	-	-	-	-	-	-	-	-	-	-	-	\$55 00*
Middlesex North,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Middlesex South,	11 00	8 00	6 00	-	-	-	-	-	-	-	-	-	-	-	-	12 00*
Worcester,	5 00	1 00	2 00	-	1 00	\$1 00	-	-	\$0 50	\$1 0	\$1 00	\$1 00	\$1 00	\$1 00	\$1 00	19 00
Worcester West,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Worcester North,	35 25	33 00	10 00	-	4 00	4 50	-	-	9 00	-	1 25	-	50	-	6 25	3 50
Worcester North-West,	50	-	50	-	-	-	-	-	-	-	-	-	-	-	-	1 50
Worcester South,	1 00	-	-	-	-	-	-	-	2 00	-	-	-	-	-	-	-
Worcester South-East,	-	3 00	-	\$5 00	-	-	-	-	-	4 00	-	-	-	4 00	3 00	-
Hamps., Franklin & Hampden,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Hampshire,	3 00	12 00	3 00	50	50	-	-	-	3 50	-	-	-	2 00	2 00	1 00	-
Highland,	1 00	-	-	3 00	5 00	-	\$3 00	\$0 50	10 25	3 00	2 00	-	-	5 00	25	-

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Hampden,	-	\$18 00	\$1 00	-	-	-	\$10 50	\$12 00	\$0 25	-	-	-	\$0 50	-	\$0 50	-
Hampden East,	\$1 75	1 50	1 25	-	-	-	-	75	50	\$1 25	\$0 50	\$0 75	1 25	-	-	-
Union,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Franklin,	-	-	-	-	-	-	-	-	-	-	-	-	5 00	\$13 75	-	-
Housatonic,	62 00	31 00	56 00	\$18 00	\$38 00	\$6 00	16 00	9 00	31 00	-	-	-	1 00	-	-	-
Berkshire,	36 00	21 00	36 00	15 00	36 00	5 00	12 00	9 00	36 00	6 00	3 00	6 00	-	69 00	-	-
Hoosac Valley,	18 00	10 00	7 00	12 00	16 00	-	-	19 00	15 00	5 00	6 00	-	3 00	-	-	-
Norfolk,	-	-	-	-	-	-	-	-	-	-	-	-	-	35 50	-	-
Bristol,	36 00	8 00	-	-	-	-	-	-	-	-	-	-	-	28 50*	-	-
Bristol Central,	22 00	8 20	50	-	-	6 00	-	-	7 05	-	6 00	-	-	-	-	-
Plymouth,	-	13 00	7 00	-	7 00	-	-	-	-	-	7 00	-	-	-	-	-
Marshfield,	4 37	-	37	-	-	-	-	-	75	75	50	-	75	2 00	-	-
Hingham,	22 50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barnstable,	21 00	5 00	-	-	5 00	-	-	-	-	4 00	9 00	-	-	35 05	-	-
Nantucket,	8 00	-	-	-	6 00	-	-	-	-	-	-	-	-	-	-	-
Martha's Vineyard,	26 00	7 00	-	5 00	12 00	5 00	15 50	-	5 00	6 00	-	6 00	-	3 00	-	-
Totals,	\$328 37	\$182 70	\$137 62	\$58 50	\$137 50	\$27 50	\$47 00	\$37 50	\$128 55	\$42 50	\$17 75	\$24 75	\$23 00	\$278 80	-	-

* Collection of Roots and Vegetables.

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED.—Concluded.

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FARM PRODUCTS—Concluded.

SOCIETIES.	Total amount of- fered for Grain and Root Crops.	Total amt't award- ed for Grain and Root Crops.	Total amt't paid for Grain and Root Crops.	Broomcorn Brush.	Fruits.	Flowers.	Any other culti- vated Crops.	Milk.	Butter.	Cheese.	Honey.	Wheat Bread.	Rye and Indian Bread.	Corn Bread.	Total amount paid out under the head of Farm Products.
Massachusetts,	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Essex,	\$138 00	\$18 00	\$18 00	-	\$138 00	\$46 00	\$58 50*	-	\$30 00	-	\$9 00	-	\$11 00	-	\$344 35
Middlesex,	73 00	63 00	63 00	-	129 50	21 50	-	-	20 00	-	2 00	\$11 00	3 00	-	250 00
Middlesex North,	105 00	67 00	20 00	-	85 50	-	-	-	16 00	-	-	12 00	6 00	-	-
Middlesex South,	144 00	55 50	47 00	-	43 50	14 24	18 50	-	14 00	-	-	21 70†	-	-	71 53
Worcester,	45 00	35 50	35 50	-	3 50	15 00	-	-	23 00	\$45 00	-	4 50	3 00	-	129 50
Worcester West,	52 00	-	-	-	21 00	16 00	3 00	-	10 00	51 00	-	6 00	6 00	-	101 25
Worcester North,	178 00	108 25	108 25	-	87 50	20 50	28 50	-	13 50	3 50	3 75	4 50	3 00	-	273 00
Worcester North-West,	4 50	2 50	2 50	-	-	4 50	-	-	3 00	3 00	-	50	50	-	15 00
Worcester South,	50 00	-	-	-	38 00	3 50	-	-	14 00	14 00	25	12 00	6 00	-	90 75
Worcester South-East,	99 00	19 00	16 00	-	93 75	10 25	8 00	-	18 00	7 00	2 75	3 00	3 00	-	140 75
Hamps., Franklin & Hampden, Hampshire,	72 00	17 50	11 50	-	44 25	11 00	17 50	-	10 50	3 00	-	5 00	1 50	\$1 50	69 75
Hampshire,	88 00	48 20	46 24	-	41 50	18 25	-	-	10 00	10 00	11 37	3 00	7 50	3 00	140 86
Highland,	84 00	38 00	38 00	-	12 00	1 50	8 75	\$3 50	6 50	6 50	1 50	75	50	50	75 00

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Hampden,	\$318 00	\$42 75	\$30 25	-	\$52 50	\$19 00	\$31 00	-	\$5 00	\$1 00	\$1 50	\$1 50	\$2 00	\$0 50	\$49 25
Hampden East,	95 90	10 00	10 00	-	14 50	4 00	20 75	-	19 00	9 00	5 75	6 75	6 00	-	95 75
Union,	.	.	.	.	.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Franklin,	.	.	.	.	.	60 50	18 75	16 25	-	66 00	17 00	-	-	10 00	5 50	1 50	4 50	7 00	3 50	121 25
Housatonic,	.	.	.	.	.	-	-	-	\$3 00	124 00	31 00	48 50	-	36 00	38 00	-	6 00	3 00	3 00	560 50
Berkshire,	.	.	.	.	.	300 00	295 00	295 00	-	116 00	17 50	-	-	36 00	44 00	10 00	13 00	5 00	6 00	542 50
Hoosac Valley,	.	.	.	.	.	144 00	115 00	115 00	-	66 00	15 00	-	-	10 00	19 00	7 00	5 00	6 00	2 00	245 00
Norfolk,	.	.	.	.	.	86 00	35 50	21 00	-	165 00	28 00	-	-	31 00	3 00	-	15 00	5 00	-	179 00
Bristol,	.	.	.	.	.	271 00	72 50	72 50	-	116 00	16 50	-	-	29 00	19 00	11 00	4 50	1 25	10 25†	280 00
Bristol Central,	.	.	.	.	.	210 00	49 75	49 75	-	57 25	8 25	-	-	14 00	5 00	23 50	3 00	2 50	-	163 25
Plymouth,	.	.	.	.	.	175 00	34 00	34 00	-	85 75	51 00	5 00	-	40 00	39 00	1 00	7 50	4 50	-	433 75
Marshallfield,	.	.	.	.	.	29 00	-	-	-	33 00	5 00	4 00	-	6 00	3 00	50	3 50	-	-	62 24
Hingham,	.	.	.	.	.	92 50	22 50	-	-	97 90	16 75	45 40	-	17 00	5 00	6 00	6 00	3 50	-	-
Barnstable,	.	.	.	.	.	135 00	79 05	79 05	-	28 00	12 73	-	-	4 00	2 00	-	6 00	7 00	6 00	144 78
Nantucket,	.	.	.	.	.	142 00	16 00	16 00	-	42 00	12 25	-	-	19 00	-	-	-	3 00	-	124 25
Martha's Vineyard,	.	.	.	.	.	118 00	90 50	90 50	-	45 85	5 75	23 20	-	17 25	6 50	-	4 50	5 00	4 00	202 55
Totals,	.	.	.	.	.	\$3,209 40	\$1,353 75	\$1,225 29	\$3 00	\$1,847 75	\$445 97	\$320 60	\$3 50	\$482 75	\$342 00	\$98 37	\$170 70	\$111 75	\$40 25	\$4,905 71

* Collections of Vegetables. † Sundries.

APPENDIX.

ANALYSIS OF PREMIUMS AND GRATUITIES AWARDED—Concluded.

MISCELLANEOUS.

SOCIETIES.	Amount awarded for Agricultural Imple- ments.	Amount offered for raising forest trees.	Amount awarded and paid out for the same.	Amount for experi- ments on manures.	Am't awarded for all other objects strict- ly agricultural not specified above.	Amount awarded for objects other than agricultural.	No. of persons who received premiums and gratuities.
Massachusetts, . . .	-	\$1,000 00	-	-	-	-	12
Essex,	\$88 00	30 00	-	\$40 00	-	\$149 50	412
Middlesex,	18 00	-	-	-	-	60 50	198
Middlesex North, . . .	2 00	-	-	-	-	27 00	-
Middlesex South, . . .	27 50	30 00	-	25 00	\$8 00	66 95	193
Worcester,	92 50	22 00	-	-	-	15 25	212
Worcester West, . . .	20 00	30 00	-	10 00	-	92 00	150
Worcester North, . . .	51 75	50 00	-	-	24 00	92 62	236
Worcester North-West,	-	-	-	-	-	27 50	67
Worcester South, . . .	3 50	35 00	-	-	7 00	97 45	176
Worcester South-East,	-	30 00	-	-	-	72 00	207
Hampshire, Franklin } and Hampden, }	11 50	-	-	-	-	40 25	210
Hampshire,	16 25	15 00	-	40 00	-	44 60	190
Highland,	-	-	-	-	3 00	96 00	144
Hampden,	31 00	15 00	-	-	-	57 25	73
Hampden East,	19 50	25 00	-	86 00	-	39 00	75
Union,	-	-	-	-	-	-	9
Franklin,	12 00	10 00	-	-	13 50	47 75	179
Housatonic,	18 00	-	-	-	-	232 00	313
Berkshire,	62 00	-	-	-	-	423 00	475
Hoosac Valley,	-	-	-	-	-	150 50	300
Norfolk,	23 00	15 00	-	-	-	29 00	160
Bristol,	9 00	105 00	\$43 00	60 00	-	242 25	378
Bristol Central, . . .	35 00	-	-	-	-	103 00	271
Plymouth,	12 75	60 00	-	60 00	-	220 12	365
Marshfield,	-	-	-	-	-	67 75	218
Hingham,	-	-	-	-	61 00	137 89	650
Barnstable,	3 00	7 00	-	12 00	-	60 63	227
Nantucket,	-	13 00	-	12 00	45 00	63 50	114
Martha's Vineyard, . .	-	15 00	-	20 00	18 00	109 57	246
Totals,	\$556 25	\$1,507 00	\$43 00	\$365 00	\$179 50	\$2,764 32	6,491

NAMES of the Cities and Towns in which resided the persons when receiving the Premiums and Gratuities awarded by the County Societies, and the several amounts as disbursed.

MASSACHUSETTS.

Brighton, \$200 00	Newburyport, \$50 00
Danvers, 25 00	Newton, 15 00
Dedham, 15 00	Palmer, 150 00
Milton, 15 00	Waltham, 25 00
Needham, 100 00	Total, \$595 00
Also three scholarships, in Cambridge, Hadley and Sunderland, . 153 00	

ESSEX.

Amesbury, \$5 00	Marblehead, \$23 00
Atkinson, 50	Methuen, 9 00
Andover, 14 00	Middleton, 14 00
Boston, 40 00	Newbury, 38 00
Boxford, 37 50	Newburyport, 24 50
Bradford, 96 00	North Andover, 71 00
Danvers, 122 00	Rowley, 12 00
Georgetown, 1 00	Salem, 21 00
Groveland, 32 50	South Danvers, 10 50
Haverhill, 399 50	Topsfield, 23 50
Ipswich, 5 50	Wenham, 6 00
Lawrence, 20 00	West Newbury, 41 00
Lynn, 1 50	Total, \$1,073 50
Lynnfield, 5 00	

MIDDLESEX.

Acton, \$43 00	Boston, \$8 00
Arlington, 37 00	Boxborough, 2 00
Bedford, 13 75	Cambridge, 31 00
Belmont, 104 00	Carlisle, 6 25
Billerica, 3 00	Charlestown, 50

MIDDLESEX—CONTINUED.

Chelmsford,	\$7 00	Sherborn	\$0 50
Concord,	205 75	Somerville,. . . .	17 00
Fitchburg,	3 00	Stow,	26 75
Framingham,	49 50	Sudbury,	5 50
Groton,	8 00	Waltham,	16 50
Hudson,	5 75	Wayland,	20 00
Lexington,	182 25	Westford,	8 00
Lincoln,	46 25	Weston,	3 50
Littleton,	28 00	Winchester,	1 00
Malden,	2 00	Woburn,	31 50
Marlborough,	15 25	Worcester,	1 00
Providence,	4 00	Total,	\$881 50

MIDDLESEX NORTH.

Acton,	\$8 00	Reading,	\$5 00
Billerica,	22 00	Tewksbury,	16 25
Chelmsford,	130 50	Tyngsborough,	94 00
Dunstable,	68 00	Wilmington,	25 00
Dracut,	38 50	Total,	\$528 75
Lowell,	121 50		

MIDDLESEX SOUTH.

Ashland,	\$18 75	Out of the district,	\$12 50
Framingham,	348 08	Sherborn,	10 25
Hopkinton,. . . .	19 00	Southborough,	26 25
Holliston,	7 50	Sudbury,	20 68
Marlborough,	12 25	Wayland,	26 81
Natick,	27 55	Total,	\$519 62

WORCESTER.

Auburn,	\$2 00	Charlton,	\$15 00
Barre,	21 00	Dudley,	8 00
Bolton,	15 00	Fitchburg,	111 00
Boylston,	6 00	Grafton,	15 00

WORCESTER—CONTINUED.

Hardwick,	\$5 00	Shrewsbury,	\$85 25
Holden,	3 50	Southbridge,	14 00
Leominster,	25 00	Spencer,	3 00
Milford,	85 00	Sterling,	50
Millbury,	101 00	Sutton,	222 00
New Braintree,	22 00	Webster,	2 00
Northborough,	5 00	Westborough,	86 00
North Bridgewater,	150 00	West Boylston,	32 50
Northbridge,	1 00	Worcester,	481 75
Oakham,	75	Other towns out of district,	28 50
Oxford,	22 00		
Princeton,	99 00	Total,	\$1,517 75

WORCESTER WEST.

Athol,	\$4 00	Oakham,	\$14 50
Barre,	872 75	Palmer,	55 00
Brimfield,	20 00	Petersham,	1 75
Boston,	11 00	Prescott,	8 00
Brookline,	1 50	Princeton,	27 00
Charlton,	37 00	Sturbridge,	7 00
Fitchburg,	100 00	Sutton,	81 00
Hardwick,	100 00	Templeton,	23 25
Hubbardston,	2 00	Warren,	14 00
Monson,	15 00	Winchester, N. H.,	25 00
New Braintree,	20 25	Worcester,	28 25
North Brookfield,	23 75	Total,	\$1,022 00

WORCESTER NORTH.

Ashburnham,	\$13 00	Northborough,	\$1 00
Ashby,	8 00	Oakdale,	1 00
Boston,	7 00	Princeton,	217 50
Fitchburg,	536 37	Royalston,	6 00
Lancaster,	2 00	Shirley,	14 00
Leominster,	64 25	Sterling,	11 00
Littleton,	8 00	Westminster,	47 50
Lunenburg,	113 75		
New Haven,	1 50	Total,	\$1,051 87

WORCESTER NORTH-WEST.

Athol, \$38 25	Phillipston, \$21 66
Fitzwilliam, N. H., 58	Royalston, 9 00
New Salem, 1 00	Springfield, 2 58
Orange, 2 67	
Petersham, 1 58	Total, \$77 32

WORCESTER SOUTH.

Brimfield, \$40 00	Sturbridge, \$174 45
Brookfield, 16 40	Sutton, 31 00
Charlton, 152 55	Wales, 50
Dudley, 53 00	Warren, 45 90
Holland, 9 00	Webster, 26 90
Millbury, 50	Worcester, 1 00
Southbridge, 99 50	
Spencer, 5 00	Total, \$655 70

WORCESTER SOUTH-EAST.

Bellingham, \$6 50	Providence, R. I., \$8 00
Blackstone, 11 00	Salem, Oregon, 35
Charlton, 17 00	Southborough, 12 00
Franklin, 4 00	Sutton, 20 00
Grafton, 19 00	Upton, 65 00
Holliston, 31 25	Uxbridge, 15 00
Hopkinton, 88 25	Westborough, 68 00
Medway, 3 12	Wrentham, 3 25
Mendon, 125 00	
Milford, 229 87	Total, \$726 59

HAMPSHIRE, HAMPDEN AND FRANKLIN.

Amherst, \$18 00	Easthampton, \$39 50
Chicopee, 30 00	Granby, 4 00
Cummington, 11 00	Hadley, 60 50
Deerfield, 136 00	Hatfield, 29 50

APPENDIX.

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HAMPSHIRE, HAMPDEN AND FRANKLIN—CONTINUED.

Leverett, \$4 00	Springfield, \$21 00
Northampton, 269 00	Sunderland, 39 00
Plainfield, 19 00	Westhampton, 5 00
Prescott, 8 00	Whately, 4 00
Shelburne, 53 00	Williamsburg, 34 50
South Hadley, 17 00	
Southampton, 26 00	Total, \$823 00

H A M P S H I R E .

Amherst, \$352 65	Pelham, \$29 25
Belchertown, 23 25	Prescott, 4 25
Enfield, 24 00	Shutesbury, 7 00
Chicopee, 12 00	South Deerfield, 25 00
Granby, 9 00	South Hadley, 5 00
Hadley, 62 75	Springfield, 110 00
Leverett, 20 82	Sunderland, 133 05
Monson, 5 00	Westfield, 28 00
Northampton, 1 00	Total, \$852 02

H I G H L A N D .

Amherst, \$5 50	Newton Falls, \$0 50
Becket, 71 50	Northampton, 6 00
Chester, 65 75	Peru, 40 75
Dalton, 2 00	Pittsfield, 20 25
Hinsdale, 47 75	Russell, 50
Huntington, 4 50	Southampton, 10 00
Lanesborough, 2 50	Washington, 3 75
Lee, 50	Worthington, 17 50
Middlefield, 144 75	
Montgomery, 3 00	Total, \$447 00

H A M P D E N .

Agawam, \$2 00	Chicopee, \$65 00
Brimfield, 3 50	Holyoke, 13 00

HAMPDEN—CONTINUED.

Longmeadow, . . .	\$67 50	West Springfield, . . .	\$122 50
Ludlow, . . .	6 00	Wilbraham, . . .	49 00
Springfield, . . .	375 00		
Westfield, . . .	9 00	Total, . . .	\$712 50

HAMPDEN EAST.

Belchertown, . . .	\$18 75	Monson, . . .	\$217 00
Brimfield, . . .	34 00	Palmer, . . .	167 25
Holland, . . .	7 00	Wales, . . .	2 00
Ludlow, . . .	12 00	Total, . . .	\$458 00

UNION.

Blandford, . . .	\$10 00	Russell, . . .	\$3 00
Chester, . . .	8 00		
Otis, . . .	2 00	Total, . . .	\$18 00

FRANKLIN.

Ashfield, . . .	\$2 50	Montague, . . .	\$15 50
Bernardston, . . .	24 00	Northfield, . . .	33 75
Coleraine, . . .	17 50	Orange, . . .	3 00
Conway, . . .	98 50	Out of the county, . . .	6 00
Deerfield, . . .	157 50	Rowe, . . .	6 00
Erving, . . .	7 00	Shelburne, . . .	204 25
Gill, . . .	12 50	Shutesbury, . . .	2 00
Greenfield, . . .	189 50	Sunderland, . . .	40 50
Leverett, . . .	12 00		
Leyden, . . .	11 00	Total, . . .	\$843 00

HOUSATONIC.

Adams, . . .	\$2 00	Great Barrington, . . .	\$399 00
Alford, . . .	58 00	Lee, . . .	114 00
Becket, . . .	11 00	Lenox, . . .	102 50
Egremont, . . .	151 00	Lanesborough, . . .	7 00

APPENDIX.

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HOUSATONIC—CONTINUED.

Monterey, \$44 00	Stockbridge, \$177 50
New Marlborough, . . . 85 50	State of Connecticut, . . 16 00
Otis, 2 50	State of New York, . . . 13 00
Pittsfield, 5 00	Tyringham, 16 00
Richmond, 4 00	West Stockbridge, 12 00
Sandisfield, 5 00	
Sheffield, 372 00	Total, \$1,542 00

BERKSHIRE.

Becket, \$18 00	Peru, : \$13 00
Cheshire, 84 00	Pittsfield, 577 50
Dalton, 68 00	Richmond, 81 00
Glendale, 2 00	Sheffield, 30 00
Great Barrington, . . . 67 50	South Adams, 80 00
Hancock, 20 50	South Williamstown, . . . 21 00
Lanesborough, 233 50	Stockbridge, 135 00
Lee, 128 00	Washington, 2 00
Lenox, 261 00	West Stockbridge, 4 00
Monterey, 8 00	Williamstown, 104 00
New Ashford, 13 50	Windsor, 2 00
North Adams, 124 00	
Otis, 4 00	Total, \$2,026 50

HOOSAC VALLEY.

Cheshire, \$37 25	North Adams, \$252 50
Clarksburg, 6 00	Pittsfield, 1 00
Florida, 16 50	Pownall, 29 00
Hinsdale, 6 00	Stamford, 3 00
Horse Show, three days, . 361 50	South Adams, 136 00
Lanesborough, 24 00	Williamstown, 259 50
Lee, 22 00	Windsor, 2 00
Lenox, 30 75	Total, \$1,187 00

NORFOLK.

Boston,	\$58 00	Needham,	\$143 00
Brookline,	23 00	Quincy,	4 00
Canton,	89 00	Randolph,	1 00
Dedham,	137 50	Roxbury,	76 00
Dorchester,	197 00	Sharon,	11 00
Dover,	86 25	Stoughton,	67 00
Foxborough,	1 00	Walpole,	16 00
Franklin,	1 00	West Roxbury,	140 00
Medfield,	24 50	Weymouth,	57 00
Medway,	6 50	Wrentham,	11 00
Milton,	41 00	Total,	\$1,090 75

BRISTOL CENTRAL.

Acushnet,	\$59 25	New Bedford,	\$390 50
Berkley,	90 25	Norton,	53 00
Dartmouth,	8 25	Plymouth,	10 00
Dighton,	14 75	Raynham,	14 50
Fairhaven,	1 00	Rochester,	10 00
Fall River,	288 50	Somerset,	29 00
Freetown,	55 00	Swansey,	190 00
Lakeville,	122 75	Taunton,	464 00
Mansfield,	8 00	Westport,	17 50
Middleborough,	6 00	Total,	\$1,840 50
Myrick's,	13 25		

PLYMOUTH.

Abington,	\$88 00	Hingham,	\$3 50
Bridgewater,	622 05	Kingston,	4 60
Carver,	13 00	Lakeville,	21 00
Dartmouth,	1 00	Marion,	10 00
Duxbury,	17 25	Marshfield,	6 00
East Bridgewater,	97 00	Mattapoisett,	50
Halifax,	43 75	Medford,	9 00
Hanson,	1 00	Middleborough,	110 76

APPENDIX.

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PLYMOUTH—CONTINUED.

New Bedford, . . . \$61 50	South Scituate, . . . \$13 00
North Bridgewater, . . . 880 25	Stoughton, . . . 20 00
Plymouth, . . . 40 63	Taunton, . . . 115 00
Plympton, . . . 42 00	Wareham, . . . 5 00
Rochester, . . . 43 75	West Bridgewater, . . . 130 14
Pembroke, . . . 8 00	Total, . . . \$1,902 68

MARSHFIELD.

Abington, . . . \$0 25	Marshfield, . . . \$167 86
Duxbury, . . . 37 91	North Bridgewater, . . . 2 00
East Boston, . . . 6 00	Pembroke, . . . 10 50
Easton, . . . 50	Plymouth, . . . 2 37
Hanover, . . . 25	Scituate, . . . 3 50
Kingston, . . . 2 25	Total, . . . \$233 39

HINGHAM.*

Cohasset, . . . -	Quincy, . . . -
Hanover, . . . -	Scituate, . . . -
Hingham, . . . -	Weymouth, . . . -
Hull, . . . -	Total, . . . -
Marshfield, . . . -	

BARNSTABLE.

Barnstable, . . . \$351 06	Sandwich, . . . \$27 50
Dennis, . . . 15 25	Yarmouth, . . . 23 80
Harwich, . . . 7 00	Total, . . . \$424 61

NANTUCKET.

No towns specified in returns.	Total, . . . \$506 75
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MARTHA'S VINEYARD.

Chilmark, . . . \$180 00	Tisbury, . . . \$335 25
Edgartown, . . . 91 02	Total, . . . \$606 27

* No disbursements in returns.

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